

VISIT...

LANZAROTE
Caliente.COM

ARTICLE

HUMANS AND HUMANS+: TECHNOLOGICAL ENHANCEMENT AND CRIMINAL RESPONSIBILITY¹

SUSAN W. BRENNER²

I. INTRODUCTION

*[G]radually, the truth dawned on me: that Man had not
remained one species³*

It has been approximately 30,000 years since our species—*Homo sapiens sapiens*—shared the earth with another member of the genus *Homo*.⁴ I note

¹ It was only after I decided to use Humans+ as part of the title for this article that I discovered the very similar device used by the transhumanist organization, *Humanity+*. See *Mission*, HUMANITY PLUS, <http://humanityplus.org/about/mission/> (last visited Feb. 25, 2013).

² NCR Distinguished Professor of Law & Technology, University of Dayton School of Law, Dayton, Ohio, USA. Email: susanwbrenner@yahoo.com.

³ H.G. WELLS, *THE TIME MACHINE* 59 (Frank D. McConnell ed. 1977).

⁴ See GRAHAM CONNAH, *FORGOTTEN AFRICA: AN INTRODUCTION TO ITS ARCHAEOLOGY* 7–16 (2004) (supporting emergence of genus *Homo* in Africa); CHRIS GOSDEN, *PREHISTORY: A VERY SHORT INTRODUCTION* xiv–xv, 39–42 (2003) (summarizing rise of *Homo sapiens sapiens*). “Taxonomy,” or “the study of classification,” involves the process of sorting plants and animals into categories, including species. STEPHEN JAY GOULD, *EVER SINCE DARWIN: REFLECTIONS IN NATURAL HISTORY* 231 (1977). The species *Homo sapiens* includes *Homo sapiens sapiens* (modern humans) as well as several “archaic” members of the species. See, e.g., William Howells, *Getting Here: The Story of Human Evolution* 122–23 (Washington, DC: Compass Press 1993). See also R.A. Foley, *The Origins of Human Behaviour* 87 (New York, NY: Routledge 2000) (noting rise of *Homo sapiens neanderthalensis*).

As Gould notes, the category “of species has a special status in the taxonomic hierarchy. Under tenets of the ‘biological species concept,’ each species represents a ‘real’ unit in nature. Its definition reflects this status: ‘a population of actually or potentially interbreeding organisms sharing a common gene pool.’” Gould, *supra* at 231–32. See *Genetics and Genomics Glossary*, U.S. GEOLOGICAL SURVEY, U.S. DEP’T OF THE INTERIOR, http://www.usgs.gov/ecosystems/genetics_genomics/glossary_s.html (defining species as a “group of organisms with a high degree of physical and genetic similarity, that naturally interbreed among themselves and can be differentiated from members of related groups of organisms.”). As Gould also notes, “genus” is that category “[a]bove the species level” and “subspecies” is the category below it. GOULD, *supra* at 232.

For the rise of modern humans, see JOHN F. HOFFECKER, *A PREHISTORY OF THE NORTH: HUMAN SETTLEMENT OF THE HIGHER LATITUDES* 70–82 (2005). The Neanderthals—who were either a separate species of *Homo* or a subspecies *Homo sapiens*—“disappeared

this circumstance for two reasons, the first of which is that it underscores the fact that while racial and/or cultural differences have generated conflict among modern humans, taxonomic differences have not.⁵

The second reason is that some scientists believe the demise of the Neanderthals was the result of competition from, and even the use of force by, our ancestors.⁶ If that is true, it suggests that conflicts could arise if standard-issue *Homo sapiens sapiens* found themselves sharing the Earth with individuals whose *Homo sapiens sapiens* abilities had been “enhanced” in any of several ways.⁷ As I note in Part II(B), these “enhancements” may very well

from the fossil record approximately 30,000 years ago.” *Id.* at 68; See HOWELLS, *supra* at 138–40, 214–17 (agreeing that Neanderthals should be recognized as “a full species, *Homo neanderthalensis*,” rather than “the subspecies *Homo sapiens neanderthalensis*”). For an overview of taxonomic classification as applied to humans, see George Gaylord Simpson, *The Meaning of Taxonomic Statements*, in CLASSIFICATION AND HUMAN EVOLUTION 1–29 (Sherwood L. Washburn ed. 1963).

Experts generally agree that the Neanderthals’ disappearance was “closely tied to the arrival of modern humans,” but tend to disagree about precisely what caused it. See HOFFECKER, *supra* at 68–69. One theory is that the species interbred, which led to the Neanderthals’ absorption into *Homo sapiens sapiens*. *Id.* at 68. Another is that Neanderthals “were out-competed” in hunting and other essential endeavors by modern humans, who gradually pushed them “into more marginal and harsher environments, where they progressively went extinct.” Azar Gat, *Social Organization, Group Conflict and the Demise of Neanderthals*, 39.4 MANKIND Q., at 437, 440, 443, 446 (1999).

⁵ For an overview of taxonomic classification applied to humans, see Simpson, *supra* note 4, at 1–29.

⁶ See Gat, *supra* note 4, at 437.

⁷ For the purposes of this article, I will rely, in part, on the definition of enhancement formulated by another scholar, who defined as “the use of innovative technologies to augment or enhance human functions and abilities beyond the replacement of dysfunctional cellular groups and organs. In other words, human enhancement includes anything that goes above and beyond restoring normal human physiology and functions.” NAYEF R.F. AL-RODHAN, *THE POLITICS OF EMERGING STRATEGIC TECHNOLOGIES: IMPLICATIONS FOR GEOPOLITICS, HUMAN ADVANCEMENT AND HUMAN DESTINY* 178 (2011). For our purposes, I define Enhanced humans as human beings who utilize technology to augment their intellectual and/or physical abilities in a fashion that exceeds what “normal” humans can attain. See *id.* In other words, enhanced human beings are humans who have used technology to boost their innate “capabilities beyond the species-typical level or statistically normal range of functioning for an individual.” See FRITZ ALLHOFF ET AL., *ETHICS OF HUMAN ENHANCEMENT: 25 QUESTIONS & ANSWERS*, U.S NAT’L SCI. FOUND 8 (2009) (emphasis in original), available at http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1000&context=phil_fac.

For a plausible scenario as to how the type of conflict hypothesized above could arise and the forms it might take, see DANIEL H. WILSON, *AMPED* (2012). In Wilson’s novel, which takes place in the near future in the United States, some people (“amps”) have neural

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

produce “new humans,” whose abilities exceed those of current humans in any number of ways.⁸

Many believe this scenario is inevitable, if only because we are already

implants that develop a model of their brain, after which their “neural circuits . . . adapt, strengthening existing pathways associated with concentration and motor function,” a process that continues as long as the implant remains in place. *Id.* at 2. The implants are, in most cases, installed to increase the person’s intelligence. *See id.* at 8–11. For a discussion of neural implants, see *infra* notes 11, 13. The novel also includes two men whose bodies have been altered by different types of implants; one is a huge “titan,” who is heavily muscled and can monitor his blood pressure, heart rate, and perspiration and can shut down pain. WILSON, *supra*, at 105–06. Another is a slender man who is “seven feet tall” and has “custom-fabricated carbon fiber legs with painful-looking backward knee joints” along with “lumpy bio-mechanical implants” incorporated into his arms. *Id.* at 106–07.

The novel traces the development of hostility and, later, violence, as those who have an implants become the targets of those who do not and who claim they (those with implants) “create[] an unlevel playing field” for the latter. *See id.* at 226 (“You people are no longer human”), 258; As to violence, see *id.* at 188–96. In a fictive decision, the United States Supreme Court notes that the Fourteenth Amendment protects citizens “based on their immutable characteristics,” and therefore holds that because the “use of implantable technology constitutes an *elective surgery* . . . there is therefore no protection for implanted citizens” under the Fourteenth Amendment. *Id.* at 5 (emphasis in original). And in another fictive decision, the United States District Court for the Western District of Pennsylvania holds that “[i]n an effort to remedy the growing disparity between natural and enhanced levels of intelligence, and in an effort to create a level playing field, we hereby find that individuals with artificially enhanced intelligence lack the capacity to contract as a matter of law.” *Id.* at 32. As a result, the contracts amps had entered into—such as leases—are no longer enforceable. *Id.* at 34–35.

Finally, in a scenario reminiscent of the internment of Japanese-Americans during World War II, the President issues an order which states that

WHEREAS the successful safeguarding of the nation requires every possible protection against technological threats, be they from home or abroad, and the existence of persons made militarized by implantation technology poses a threat to their fellow citizens . . .

I hereby authorize the Secretary of Defense, and the military commanders whom he may designate, to prescribe ‘safety zones’ . . . from which any or all persons may be excluded, and with respect to which, the right of any person to enter, remain in, or leave shall be subject to whatever restrictions are necessary.

Id. at 219. As a result, National Guardsmen confine amps in “Safety Zone[s],” which they are not allowed to leave. *Id.* at 237–47.

⁸ As I explain below, in this article I will not analyze legal issues that could arise if and when the world is populated by two species of the Genus *Homo*, though many see that as a very real possibility. *See infra* notes 15–17. For more on this possibility, see AL-RODHAN, *supra* note 7 at 179 (A “post-human” could “no longer be considered human, even if its evolutionary roots were in humanity”); *see also infra* Part II.B.

enhancing ourselves:⁹ Plastic surgery—“cosmetic enhancement”—is no longer the exclusive province of movie stars; its popularity and variety continue to increase among members of the general public.¹⁰ On a more substantive level, cochlear implants improve hearing, titanium knees improve mobility, and artificial hearts prolong life.¹¹

⁹ See AL-RODHAN, *supra* note 7, at 204 (“Human nature . . . will inevitably drive us toward increasingly ambitious forms of human enhancement”) *see also infra* Part II.B.

¹⁰ See *Celebrating 15 Years of Trustworthy Plastic Surgery Statistics*, AM. SOC’Y FOR AESTHETIC PLASTIC SURGERY (March 20, 2012), <http://www.surgery.org/media/news-releases/celebrating-15-years-of-trustworthy-plastic-surgery-statistics>; *see also The Brotox Decade: Use of Botox Cosmetic by Men Increases 258% Over 10 Years*, MARKETWIRE (June 12, 2012) <http://www.marketwire.com/press-release/the-brotox-decade-use-of-botox-cosmetic-by-men-increases-258-over-10-years-1668579.htm>; *Mommy Makeovers: Plastic Surgeons Enter the Delivery Room*, MARKETWIRE (June 13, 2012), <http://www.marketwire.com/press-release/mommy-makeovers-plastic-surgeons-enter-the-delivery-room-1668963.htm>; McKinsey Harris, *Plastic surgery among teens on the rise*, YNN.COM (May 29, 2012), http://hudsonvalley.ynn.com/content/top_stories/586085/plastic-surgery-among-teens-on-the-rise.

¹¹ See Michael John Gorman, *HUMAN+ explores the technologically enhanced future of our species*, GUARDIAN (Apr. 22, 2011), <http://www.guardian.co.uk/science/blog/2011/apr/22/human-plus-technologically-enhanced>. *See also* Linda Rubin, *Living with Chronic Knee Pain: A Cautionary Tale*, AMERICAN NEWS REPORT (March 12, 2012), <http://americannewsreport.com/living-with-chronic-knee-pain-a-cautionary-tale-8813500.html>; *Middle-ear microphone may improve cochlear implants*, R&D (Apr. 30, 2012), <http://www.rdmag.com/News/2012/04/Life-Science-Electrical-Engineering-Middle-ear-microphone-may-improve-cochlear-implants/>; Alexis C. Madrigal, *The Half-Ounce Artificial Heart That Saved a Baby’s Life*, ATLANTIC (May 24, 2012), <http://www.theatlantic.com/health/archive/2012/05/the-half-ounce-artificial-heart-that-saved-a-babys-life/257633/>.

According to a recent study, a woman paralyzed from her neck down

was able to move a robotic arm using only the power of her mind. Through this robotic appendage she was able to do something she hadn’t done for many years: pick up a cup of coffee and drink from it out without help.

This life changing feat was achieved through the surgical implantation of a computer chip within her motor cortex. . . . The chip detected activity within this region of the brain, forming what is known as a ‘neural interface’. This chip was then connected to a computer which controlled the robotic arm. After some practice, the participant’s brain adapted to the neural interface allowing her to control the arm.

Blurring the line between man and machine, BRAIN BANK (June 11, 2012), <http://thebrainbank.scienceblog.com/2012/06/11/blurring-the-line-between-man-and-machine/>. The *Brain Bank* blog is “run by a group of biologists from the University of Manchester.” *About*, BRAIN BANK, <http://thebrainbank.scienceblog.com/about/> (last visited Feb. 25, 2013).

As Gorman notes, the “individuals traditionally classified as ‘disabled’” are currently at the vanguard of human enhancement technologies. From cochlear

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

Further, enhancement is not limited to physical features and functions. Scientists are using neuroprosthetics to “repair [cognitive] deficits from dementia, stroke and other brain injuries.”¹² Nor is it necessarily limited to enhancing *native* human functions and abilities. Some are already suggesting that instead of addressing a “lost function,” neural interfaces could allow the healthy “to gain some new function.”¹³ While that option is apparently not yet available, one company took a small step in this direction in the spring of

implants and artificial hearts to neuro-prosthetics, these ‘early adopters’ of assistive technologies are pioneers inhabiting an increasingly narrow boundary between a perceived ‘lack’ and an unfair advantage in relation to the general population.

Consider South African athlete Oscar Pistorius, born with the congenital absence of the fibula from both legs, with his prosthetic blade ‘cheetah’ legs leading to his near miss from participation in the Beijing Olympics. MIT researcher Hugh Herr has suggested that we may soon require an ‘Extra Special Olympics’ to accommodate athletes with prosthetics and other enhancements. Perhaps in this context ‘non-enhanced’ athletes would be regarded with something of the polite nostalgia with which we now view ‘real tennis’ with its quaint long trousers and wooden racquets.

Gorman, *supra* note 11. For more on the “elite sport” issue, see, for example, Torbjörn Tannsjo, *Medical Enhancement and the Ethos of Elite Sport* in *HUMAN ENHANCEMENT* 315, 320–26 (J. Savulescu & Nick Bostrom ed. 2009). See also Harvey Shapiro & Chris Waddell, *Oscar Pistorius is iust the beginning*, L.A. TIMES (Aug. 3, 2012), <http://www.latimes.com/news/opinion/commentary/la-oe-shapiro-pistorius-olympics-paralympics-20120803,0,827369.story>; Helen Thompson, *Performance enhancement: Superhuman athletes*, NATURE (July 18, 2012), <http://www.nature.com/news/performance-enhancement-superhuman-athletes-1.11029>.

¹² Benedict Carey, *Memory Implant Gives Rats Sharper Recollection*, N.Y. TIMES (June 17, 2011), <http://www.nytimes.com/2011/06/17/science/17memory.html>. See *Neural Interfaces Program*, NAT’L INST. OF NEUROLOGICAL DISORDERS AND STROKE, <http://www.ninds.nih.gov/research/npp/>. Neural prostheses “can substitute a motor, sensory or cognitive modality that might have been damaged as a result of an injury or a disease.” ANNUAL REPORT 2011, CTR. FOR BIO-INSPIRED TECH., IMPERIAL COLL. LONDON, *available at* https://workspace.imperial.ac.uk/bioinspiredtechnology/Public/Annual_Report/CBIT_Annual_Report_2011.pdf. Cochlear implants are a neural prosthesis. See Steffen K. Rosahl, *Neuroprosthetics and Neuroenhancement: Can We Draw A Line?*, 9 VIRTUAL MENTOR, no. 2, Feb. 2007, at 132–39, *available at* <http://virtualmentor.ama-assn.org/2007/02/msoc2-0702.html>.

¹³ Gorman, *supra* note 11.

[W]hat about a new sense? . . . If there was a compass in your head that was always on and as easy to interpret as your sense of hearing, you might never get lost again. What if a neuroprosthetic implant allowed you to perceive sounds beyond the normal range of human hearing, like a supercharged hearing aid? Or perceive light beyond the normal range of human vision in conjunction with eye augmentation? You then quite literally would have x-ray vision.

Id. As noted above, a neural interface creates a link between a person’s brain and a computer or computer device. See *supra* note 11. Neural prostheses replace a biological functionality that has been lost or damaged. See *supra* note 12.

2012, when it announced plans to market an in-home “transcranial direct-current stimulation,” which reportedly has a “cognitive-enhancing” effect.”¹⁴

It seems, then, that we will—perhaps in the not too distant future—arrive at a state of affairs in which humanity effectively splits into two classes:¹⁵ the Enhanced, who use technology to improve their native abilities, and the Standard, who will not or cannot use technology to that end.¹⁶ Some believe this division “will create massive social strife,” as the Enhanced “will be so superior that jealousy and fear are the guaranteed reaction of the unenhanced multitude.”¹⁷

I leave the task of exploring the potential social unrest generated by the rise of Enhanced humans to science fiction writers.¹⁸ My ambitions are far more

¹⁴ Victor Píkov, *Direct-to-consumer transcranial direct current stimulation device*, NEUROTECHZONE (Mar. 2012), <http://neurotechzone.com/posts/1102>. See R. Douglas Fields, *Amping Up Brain Function: Transcranial Stimulation Shows Promise in Speeding Up Learning*, SCI. AM. (Nov. 25, 2011), available at <http://www.scientificamerican.com/article.cfm?id=amping-up-brain-function>. As of June 2012, the company in question—GoFlow—had not released the transcranial direct-current stimulation kit, but visitors to their website could sign up to be notified when the kit became available or even download the schematics for the kit and build their own. *World’s First tDCS Kit*, GOFLOW, <http://flowstateengaged.com/> (last visited Feb. 26, 2013).

A somewhat similar product is already on the market: eNeura sells a device that uses “Transcranial Magnetic Stimulation” to deal with migraine pain. *Transcranial Magnetic Stimulation*, ENEURA, <http://www.eneura.com/tms.html> (last visited Feb. 26, 2013). As one source notes, transcranial magnetic stimulation uses “magnetic fields to stimulate nerve cells in the brain.” *Transcranial Magnetic Stimulation*, MAYO CLINIC (Nov. 20, 2012), <http://www.mayoclinic.com/health/transcranial-magnetic-stimulation/MY00185>.

¹⁵ As I explain in Part II, I am not hypothesizing the emergence of a new human species, i.e., a new member of the genus *Homo*. See *infra* Part II. I am hypothesizing the emergence of a society in which humans are divided into two classes: (i) those who use technology to enhance their native attributes and abilities so they functionally (but not genetically) become Enhanced humans; and (ii) those who do not, or cannot, transcend their basic biology. See *infra* note 19.

¹⁶ I borrow the term “enhanced” from Ray Kurzweil. See RAY KURZWEIL, *THE SINGULARITY IS NEAR: WHEN HUMANS TRANSCEND BIOLOGY* 200 (2005). Kurzweil does not employ a cognate to refer to “humans,” perhaps because he believes “[u]nEnhanced humans may become increasingly hard to find.” *Id.*

¹⁷ Alan Hoshner, *Requiem for Humanity—Artificial Intelligence, Androids/Biobots*, SCIENCE 2.0 (Mar. 18, 2012), http://www.science20.com/requiem_humanity/blog/requiem_humanity_%E2%80%94artificial_intelligence_androidsbiobots-88082.

¹⁸ See *supra* note 7. The enhancements that are currently in use are not causing conflict for two reasons, the most obvious of which is that they are intended to remediate the impairment someone suffers as a result of illness, injury or congenital defects. In other words, they are intended, insofar as possible, to restore the person to “normal,” rather than to enhance their native functions and/or abilities. *Id.*

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

modest: in this article, I explore how the postulated disconnect between two classes of humans—the Enhanced and the Standard—could impact the assessment and application of criminal responsibility.¹⁹ As I explain in Part II, our legal doctrines, including our doctrines of criminal responsibility, all assume action or inaction by a “person,” a concept that we unthinkingly define as a binary construct. That is, one *is* a “person,” or they are *not*. In Part II, I review how the legal conception of “person” has evolved over the past centuries and speculate briefly as to how it may evolve in the next century or so.

In Part III, I analyze how our doctrines of criminal responsibility may be affected if and when certain humans can use technology to alter their native attributes and abilities, so that they no longer conform to the Human 1.0 conception of “person” on which those doctrines are predicated. As I explain in Parts II and III, this is not an issue we have so far had to address: we have had idiosyncratic doctrines of criminal responsibility, but they targeted issues other than those that arise from a populace that is more or less evenly divided into two differently-enabled classes of individuals. As I explain in Part III, I see no need to reinvent criminal responsibility law, but I do believe we are likely to confront difficult issues that will need to be addressed and resolved.

And, finally, Part IV provides a brief conclusion.

II. “PERSON”

*A person is a human being.*²⁰

Historically, as far as law was concerned, a “person” was a human being,

The other, related reason is that most of the enhancements currently in use are consequently not purely “cosmetic” in nature, i.e., are not elective enhancements the purpose of which is to make the person “better” than they were and, “better” than those who have not been so enhanced. And insofar as purely cosmetic enhancements are in use, the improvements they effect are in the recipient’s appearance; while this means the recipients of such enhancements are, in a relatively superficial sense, “better” than they were before, it does not fundamentally alter their biological properties in a way that makes them stronger, smarter or otherwise more “superior” to other humans. *See supra* note 7 (enhancements as creating an “unequal playing field for those who do not have” them).

¹⁹ As noted above, my analysis is limited to the issues that might arise in applying criminal responsibility to two different classes—but not two different species—of human beings. *See supra* note 15. However, insofar as the analysis encompasses issues raised by differently abled members of the Genus *Homo*, it might also be extrapolatable to the issues involved in applying criminal responsibility to different human species.

²⁰ *Commonwealth v. Lee*, 60 Ky. 229, 230 (1860). *See* BLACK’S LAW DICTIONARY 1257 (9th ed. 2009) (defining “person” as “a human being”). For more on this, see *infra* Part II.A.

but human beings were not necessarily “persons.”²¹ In other words, the status of human being was an essential but not necessarily a sufficient condition for qualifying as a legal “person.”²² In Part II(A), I note how “person” has been defined, at least in Western law, and review how the concept has evolved from including *some* human beings to including *all* human beings, at least in most modern legal systems.²³ I also review the extent to which law treats or has treated non-humans as legal “persons.”

In Part II(B), I review the speculations and predictions of scientists and scholars who study human enhancement. More precisely, I examine how they predict enhancements may alter human abilities and how those alterations might impact society and law. While the experts’ projections are speculative in varying degrees, they serve as a conceptual test bed for examining these issues.

This Part, therefore, establishes an empirical and doctrinal framework for the analysis in Part III, which focuses on the application of criminal responsibility to “persons” with varied abilities, some of which exceed that of modern humans. If enhancements create two classes of *Homo sapiens sapiens*,²⁴ lawmakers may have to decide whether members of the “new” class of humans—the Enhanced—are (merely) “persons” or are something else—something that requires the application of different legal standards.²⁵

²¹ See *Dred Scott v. Sandford*, 60 U.S. 393, 407 (describing slaves as “beings of an inferior order” with no rights); 1 WILLIAM BLACKSTONE, *COMMENTARIES ON THE LAWS OF ENGLAND* 430 (“By marriage, the husband and wife are one person in law: that is, the . . . existence of the woman is suspended . . .”) (note omitted); Barbara Abatino, Giuseppe Dari-Mattiacci & Enrico C. Perotti, *Depersonalization of Business in Ancient Rome*, 31 O.J.L.S. 365, 377 (2011) (in ancient Rome, a slave’s “legal status” was that of a “non-person”); Vivian Grosswald Curran, *Fear of Formalism: Indications from the Fascist Period in France and Germany of Judicial Methodology’s Impact on Substantive Law*, 35 CORNELL INT’L L.J. 101, 173 (2001–2002) (Nazi legal theory transformed Jews into non-persons by declaring that a Jewish individual “ceased to be a legally valid concept” except to the extent that one was part of the German Volk; Jewish persons “were defined as external to the German Volk,” and thus, did not have legal rights).

²² See *infra* Part II.A.

²³ See *TRAFFICKING IN PERSONS REPORT*, U.S. DEP’T OF STATE 33–34, 51–58 (2012), available at <http://www.state.gov/documents/organization/192587.pdf>; Mona Eltahawy, *Why Do They Hate Us?*, FOREIGN POL’Y (May/June 2012), http://www.foreignpolicy.com/articles/2012/04/23/why_do_they_hate_us; Andrew Cockburn, *21st-Century Slaves*, NAT’L GEOGRAPHIC (Sept. 2003), available at <http://ngm.nationalgeographic.com/ngm/0309/feature1/>; *supra* note 21.

²⁴ Again, my analysis assumes the co-existence of two classes of humans, rather than two species or a species and sub-species of *Homo sapiens sapiens*. See *supra* note 19.

²⁵ See *supra* Part I (Enhanced and Standard humans).

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

A. *Legal Person*

*‘[P]erson’ is a . . . generic term. Hence, when used in a statute, it embraces not only natural persons, but also artificial persons . . .*²⁶

In his 1909 treatise, John Chipman Gray considered how law had approached, and should approach, the concept of “legal persons.”²⁷ He began by noting that “[i]n books of the Law, . . . ‘person’ is often used as meaning a human being, but the technical legal meaning of a ‘person’ is a subject of legal rights and duties.”²⁸ Gray explained that while a “legal duty does not imply any exercise of will on the part of the one subject to the duty,” a “will is necessary” for the exercise of a legal right, which means that “so far as the exercise of legal rights is concerned, a person must have a will.”²⁹

He then examined the six “different kinds of persons” recognized in “various systems of Law”: normal human beings; abnormal human beings; supernatural beings; animals; inanimate objects; and juristic persons.³⁰ More precisely, Gray analyzed the extent to which the members of each class qualified as a “legal person.”³¹

While I do not fully subscribe either to Gray’s taxonomy or his assessment as to the extent to which the members of each of the categories noted above qualifies as a legal person, I find his taxonomy—with, perhaps, the exception of supernatural beings—a useful ordering principle for examining how law has historically approached the notion of “persons.” Understanding how law has defined “person” (or “legal person”) in the past is, I submit, a necessary step toward analyzing how future law might approach the task of assessing the “personhood” of enhanced human beings.

1. *Normal Human Beings*

Gray rather quickly concluded that “normal” human beings are legal persons because the “normal man or woman has a will.”³² In so doing, he implicitly assumed a unitary class of “normal” human beings, i.e., he did not address the

²⁶ HENRY CAMPBELL BLACK, *HANDBOOK ON THE CONSTRUCTION AND INTERPRETATION OF THE LAWS* 199 (2d ed. 1911).

²⁷ See JOHN CHIPMAN GRAY, *THE NATURE AND SOURCES OF THE LAW* §§ 63–148 (1909).

²⁸ *Id.* at § 63. For Gray’s views on legal rights and duties, see *id.* at §§ 1–62.

²⁹ *Id.* at § 65. Gray said that one “who has rights but no duties,” or “duties but no rights, is, I suppose, a person.” *Id.* at § 64. He cited the “King of England” as an example of “[o]ne who has rights though no duties,” a slave as an example of one “who has duties but no rights”. *Id.*

³⁰ *Id.* at § 66.

³¹ See *id.* at § 66–148.

³² *Id.* at § 67.

fracturing of “human being” into two or more distinct classes. This, as I noted above, has been the default approach to defining the concept of “legal person.”³³

Blackstone took a similar, equally cursory approach to analyzing “the persons capable of committing crimes.”³⁴ He noted that the “general rule is, that no person shall be excused from punishment for disobedience to the laws . . . excepting such as are expressly . . . exempted by the laws themselves.”³⁵ In other words, he too assumed a unitary class of “normal” human beings; the “exemptions” target humans who suffer from some impairment.³⁶ This was the common law’s approach to this issue³⁷ and is essentially the approach modern law takes to it.³⁸

2. Abnormal Human Beings

Gray also deals rather cursorily with “abnormal” human beings, whom he defines, first, as human beings who “have no will,” such as “new-born babies and idiots.”³⁹ He also includes in this category human beings “who are not destitute of natural wills, but to whom the Law, for one reason or another, denies what may be called a legal will,” by which he means minors.⁴⁰ He explains that the law deals with this class of persons, which includes what he calls “idiots,” by appointing a responsible adult as a guardian whose will is “attributed to” them.⁴¹

³³ See *supra* Part II.

³⁴ 4 WILLIAM BLACKSTONE, COMMENTARIES *20.

³⁵ *Id.* For the exemptions, see *infra* Part II.A.2–6.

³⁶ See *infra* § II(A)(2) (“abnormal” human beings). As we will also see below, both the common law and modern law also accord at least some degree of legal personhood to non-humans, i.e., animals, objects and legal constructs. See *infra* Part II.A.3–6.

³⁷ See, e.g., *State v. Redemeier*, 71 Mo. 173, 175 1879 WL 8311, at *3 (Mo. 1879) (“the law presumes every person who has reached the years of discretion to be of sound mind and capable of committing crime. . . .”). See also *Clark v. State*, 12 Ohio 483, 494 n.(a) 1843 WL 49, at *6 n.(a) (Ohio 1843) (jury charge stating that “the law presumes every person . . . to be of sufficient capacity to form the criminal purpose. . . .”).

³⁸ See, e.g., WAYNE R. LAFAVE, SUBSTANTIVE CRIMINAL LAW § 9.1(a)(4) (2d ed. 2012). See also *supra* note 35 and accompanying text; *infra* Part II.A.2–6. For more on excuse defenses in modern law, see PAUL H. ROBINSON, CRIMINAL LAW DEFENSES § 161 (2012).

³⁹ See GRAY, *supra* note 27, at § 71. He qualifies this by noting that these “abnormal” human beings are not “absolutely without wills, but their potentiality of will is so limited that it may be neglected.” *Id.* He also notes that corpses have no will. *Id.* at § 93.

⁴⁰ *Id.* at § 72. The example he uses is of a “young man” who is still a minor in the eyes of the law and therefore cannot bring suit on his own behalf for damage to his property. See *id.*

⁴¹ See *id.* at § 73 (emphasis in the original). See also *id.* at § 91.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

For Gray, then, “abnormal” human beings were human beings who had “no will” because of infancy or mental disability or who were not considered mature enough to be allowed to exercise their own will. He implicitly equates “abnormal” with a permanent or transient deficiency, because deficiency was the only possible source of “abnormality.” The possibility that one could be deemed “abnormal” because his/her abilities in some way exceeded that of “normal” human beings did not exist, either as fact or as a viable possibility.

Blackstone employed a similar approach in analyzing the “persons capable of committing crimes.”⁴² He found that those who suffer from a “defect of will” cannot be held responsible for acts that would otherwise be prosecuted as crimes, and identified six different “defects of will”, only two of which are relevant to this discussion.⁴³ The first of the relevant defects is “*infancy*, . . . which is a defect of the understanding.”⁴⁴ The second relevant defect arises “from a defective . . . understanding . . . in an *idiot* or a *lunatic*.”⁴⁵ Blackstone’s analysis of why these defects excuse criminal liability is similar to Gray’s analysis of the role they play in defining a “legal person.”⁴⁶

At common law, “idiots” (and “lunatics”) could not be prosecuted for crimes they committed.⁴⁷ Both constituted a “deficiency in will” that excused the person from the

guilt of crimes. . . . [I]diots and lunatics are not chargeable for their own acts, if committed when under these incapacities. . . . [A] total idiocy, or absolute insanity, excuses from the guilt, and of course from the punishment, of any criminal action committed under such deprivation of the senses. . . .⁴⁸

⁴² See BLACKSTONE, *supra* note 34, at *20–21.

⁴³ See *id.* at *21–33.

⁴⁴ *Id.* at 22 (emphasis in the original). For more on this from another English lawyer, see 2 JAMES FITZJAMES STEPHEN, *A HISTORY OF THE CRIMINAL LAW OF ENGLAND* 97–99 (London, Macmillan & Co. 1883).

⁴⁵ BLACKSTONE, *supra* note 34, at *24 (emphasis in the original). See also STEPHEN, *supra* note 44, at 149–65 (madness). “Idiocy” was understood to be “‘a defect of understanding from the moment of birth,’ in contrast to lunacy, which was ‘a partial derangement of the intellectual faculties, the senses returning at uncertain intervals.’” *Penry v. Lynaugh*, 492 U.S. 303, 331 (1989), *abrogated by* *Atkins v. Virginia*, 536 U.S. 304 (2002) (quoting 1 WILLIAM HAWKINS, *PLEAS OF THE CROWN* 2 n.2 (7th ed. 1795)).

⁴⁶ See BLACKSTONE, *supra* note 34, at *22–25. Blackstone’s contemporaries approached these issues in a similar matter. See, e.g., 1 WILLIAM HAWKINS, *PLEAS OF THE CROWN*, 1–2 (John Curwood ed., 8th ed. 1824) (“[T]hose who are under a natural disability of distinguishing between good and evil, as . . . ideots [sic], and lunaticks [sic] are not punishable by any criminal prosecution whatsoever.”).

⁴⁷ See, e.g., BLACKSTONE, *supra* note 34, at *24–25. See also *Lynaugh*, 492 U.S. at 331.

⁴⁸ BLACKSTONE, *supra* note 34, at *24–25. See also STEPHEN, *supra* note 44, at 149–65.

As the Supreme Court explained in *Penry v. Lynaugh*, the common law prohibition against punishing ‘idiots’ and ‘lunatics’ for criminal acts was the precursor of the insanity defense, which today generally includes ‘mental defect’ as well as ‘mental disease’ as part of the legal definition of insanity. See, e.g., American Law Institute, Model Penal Code § 4.01, p. 61 (1985) (‘A person is not responsible for criminal conduct if at the time of such conduct as a result of mental disease or defect he lacks substantial capacity either to appreciate the criminality . . . of his conduct or to conform his conduct to the requirements of law’). . . .⁴⁹

3. Supernatural Beings

I shall deal very cursorily with Gray’s third category: supernatural beings.⁵⁰ He notes that in “several systems of Law,” including “ancient Rome”, they were “recognized as legal persons.”⁵¹ Gray explains that in medieval Germany, “God and the saints seem to have been . . . regarded as true legal persons,” but notes that English common law never recognized “the Deity nor any other supernatural being” as a legal person.⁵²

For our purposes, this category of “legal person” is irrelevant (at least unless and until human enhancements or other technology advances produce supernatural beings who are capable of committing crimes).⁵³

4. Animals

Animals are Gray’s fourth category. As one author notes, “currently all humans are legal persons, while all nonhuman animals are legal things.”⁵⁴ As Gray explains, this was not always true:⁵⁵ after noting that in modern law, “animals have no legal duties,” he explains that “in early stages of the Law,” they were regarded “for some purposes as having legal duties, for a breach of

⁴⁹ *Penry v. Lynaugh*, *supra* note 45, at 332. See also 18 U.S.C. § 17 (1982 ed., Supp. V) (defense that the defendant was, “as a result of a severe mental disease or defect,” unable to “appreciate the nature and quality or the wrongfulness of his acts” at the time the offense was committed).

⁵⁰ See GRAY, *supra* note 27, at §§ 66, 95.

⁵¹ *Id.* at § 96.

⁵² *Id.* at §§ 98–99.

⁵³ For speculation that human enhancement may eventually produce “god-like creatures,” see, for example, *Are We Building Gods or Terminators?*, INSTITUTE FOR ETHICS & EMERGING TECHNOLOGIES (July 1, 2012), <http://ieet.org/index.php/IEET/more/godsorterminators20120630>.

⁵⁴ Steven M. Wise, *Legal Personhood and the Nonhuman Rights Project*, 17 ANIMAL L. 1, 5 (2010).

⁵⁵ See GRAY, *supra* note 27, at §§ 102–05.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

which they were liable to be punished.”⁵⁶ Gray attributes the notion of animals having legal duties and therefore being subject to criminal liability to “the Jews and the Greeks,” citing the Bible and Plato for support.⁵⁷

He explains that the “most remarkable instance” of animals’ being regarded as legal persons, at least for the purpose of imposing criminal liability, is “the judicial proceedings against them which were had in the Middle Ages.”⁵⁸ According to a treatise on the medieval practice of prosecuting and punishing animals, in this era, “domestic animals were regarded as members of the household and entitled to the same protection as human vassals.”⁵⁹ This author also notes that animals were “invested with human rights and inferentially endowed with human responsibilities.”⁶⁰

As another author explains, there were “two types of animal trials,” one of which involved “domestic animals suspected of serious crimes,” such as murder.⁶¹ If the animal was convicted, it was given the same sentence a human would receive, which usually meant they were put to death.⁶² In the other type of trial, “collectivities of wild animals—rats, birds, snakes, insects—were called to ecclesiastical courts to answer for crop depredation and other anti-social behaviour.”⁶³ Lawyers were appointed in both type of prosecutions to defend the accused animal(s) and often succeeded in using procedural or other tactics to avoid their client(s)’ being convicted mitigating the punishment imposed on it/them if they were.⁶⁴

According to yet another author, animal prosecutions were not limited to medieval Europe, but occurred in Malaysia, New Zealand, and part of Africa

⁵⁶ See *id.* at § 103. Gray says this could have been the product of a “legal fiction,” but finds it “likely” that there “was often no conscious use of fiction” because it “was genuinely believed that the animals really knew that they were disobeying the Law.” *Id.*

⁵⁷ See *id.* at § 104 (citing *Exodus* 21:28 (King James) and *Genesis* 5:5 (King James), and Plato, *The Laws of Plato*, book IX, 263–64 (A.E. Taylor, trans., 1934)). For more on Greek animal trials, see, for example, Jen Girgen, *The Historical and Contemporary Prosecution and Punishment of Animals*, 9 *ANIMAL L.* 97, 105–06 (2003).

⁵⁸ See GRAY, *supra* note 27, at § 105.

⁵⁹ E.P. EVANS, *THE CRIMINAL PROSECUTION AND CAPITAL PUNISHMENT OF ANIMALS* 10 (1906).

⁶⁰ *Id.* at 10–11.

⁶¹ Anila Srivastava, “Mean, Dangerous, and Uncontrollable Beasts”: *Mediaeval Animal Trials*, 40 *MOSAIC* 127, 129 (2007).

⁶² See *id.* The author notes that for “crimes short of homicide,” the animal’s life might be spared, citing an Austrian case “in the late seventeenth century,” in which a dog was “incarcerated for a year in a public marketplace for biting a member of the local council in the leg.” *Id.*

⁶³ *Id.*

⁶⁴ See *id.* See also EVANS, *supra* note 59, at 18–23; Girgen, *supra* note 57, at 100–05.

as late as the nineteenth century.⁶⁵ At least some also occurred in the seventeenth century in the American colonies.⁶⁶

As for England, Blackstone, writing in the eighteenth century, noted that Greek and Mosaic law punished animals who injured or killed human beings, but he did so in the course of discussing the deodand, under which any “perfonal chattel” that was the “immediate occa[s]ion of the death” of a human being was “forfeited to the king.”⁶⁷ As he explained, if “a hor[s]e, or ox, or other animal, of his own motion,” killed a person, it would be forfeited as a deodand, since such “misfortunes are in part owing to negligence of the owner, and . . . he is properly puni[s]hed by fuch forfeiture.”⁶⁸

Blackstone did not seem comfortable with the deodand, noting that it was “originally defigned” in “the blind days of popery” and apparently attributing its survival to “the humane [s]uper[s]tition of the founders of the Engli[s]h law.”⁶⁹ England abolished deodands in 1846,⁷⁰ and they “did not become part of the common-law tradition of” the United States.⁷¹

5. Inanimate Objects

For the most part, Gray bases his analysis of inanimate objects as legal persons on the law of deodands.⁷² He notes that inanimate objects “may

⁶⁵ See Girgen, *supra* note 57, at 108–09.

⁶⁶ See *id.* at 108. See also EVANS, *supra* note 59, at 148–49.

⁶⁷ See BLACKSTONE, *supra* note 21, at 290.

⁶⁸ *Id.* at 290–91. Oliver Wendell Holmes Jr. explained that, in many of the “early” law books,

and long afterwards, the fact of *motion* is adverted to as of much importance. A maxim of Henry Spigurnel, a judge in the time of Edward I., is reported that ‘where a man is killed by a cart, or by the fall of a house, or in other like manner, and the thing in motion is the cause of the death, it shall be deodand.’

OLIVER WENDELL HOLMES, JR., *THE COMMON LAW* 25 (1923) (quoting Y. B. 30 & 31 Ed. I., pp. 524, 525) (emphasis in the original). Holmes also noted that motion “gives life to the object forfeited.” *Id.*

⁶⁹ BLACKSTONE, *supra* note 21, at 290. He also noted that they had apparently fallen into disuse, as they were “for the mo[s]t part granted out to the lords of manors, or other liberties; to the perver[s]ion of their original de[s]ign.” *Id.* at 292. For more on this, see, for example, Anna Pervukhin, *Deodands: A Study in the Creation of Common Law Rules*, 47 AM. J. LEGAL HIST. 237, 245–48 (2005).

⁷⁰ See, e.g., Gregory L. Acquaviva & Kevin M. McDonough, *How to Win a Krimstock Hearing: Litigating Vehicle Retention Proceedings before New York’s Office of Administrative Trials and Hearings*, 18 WIDENER L.J. 23, 29 n.35 (2008) (citing The Deodands Act, 9 & 10 Vict. c. 62 (1846)).

⁷¹ *Calero-Toledo v. Pearson Yacht Leasing Co.*, 416 U.S. 663, 682–83 (1974). *Accord Austin v. United States*, 509 U.S. 602, 613 (1993). *But see* Part II.A.5, *infra*.

⁷² See GRAY, *supra* note 27, at §§ 106–10. Under the “the law of deodands,” a chattel—

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

conceivably be legal persons” because they “may be regarded as the subject of legal rights” and/or are the “subjects of legal duties.”⁷³ As to the former, Gray explains that insofar as inanimate objects are “regarded as the subject of legal rights,” they are “entitled to sue in the courts.”⁷⁴ As examples, he notes that temples in ancient Rome and “church buildings and the relics of the saints in the early Middle Ages” were considered to have rights.⁷⁵

Gray also explains that inanimate objects “have been regarded as the subject of legal duties.”⁷⁶ He notes that in ancient Greece proceedings against inanimate objects “were not . . . infrequent.”⁷⁷ And he points out that in “the Common Law,” the “attribution of guilt” to inanimate objects “appears in the form of deodands.”⁷⁸

As noted above, deodands, as such, did not become part of the American common law.⁷⁹ But as Grey explains, the notion that “there must be life in a moving object” not only shaped the law of the deodand, it also “appears most conspicuously and persistently in the Admiralty.”⁸⁰ In his treatise on the common law, Oliver Wendell Holmes Jr. observed that the “most striking example” of the premise that motion gives life to inanimate objects “is a ship,” because according to “the old books,” if “a man falls from a ship and is drowned, the motion of the ship must be taken to cause the death, and the ship

an animal or an inanimate object—was deemed to be a deodand when “a coroner’s jury decided that it had caused the death of a human being.” Pervukhin, *supra* note 69, at 237. Deodands were “automatically forfeit to the crown.” *Id.* But see *id.* at 246 (in 1556, a man was killed by a kick from a horse but the horse was not forfeited; the author speculates that, since “the horse belonged to another person,” the jury may have “felt that the horse was provoked, and didn’t want to punish the owner for someone else’s behavior.”).

⁷³ GRAY, *supra* note 27, at §§ 106–07.

⁷⁴ *Id.* at § 106.

⁷⁵ See *id.* On a somewhat more contemporary note, one author cites an early twentieth century case from India, in which “an interfamily dispute regarding custody of the family idol was reversed with orders that on retrial, counsel be appointed for the idol.” CHRISTOPHER STONE, *EARTH AND OTHER ETHICS: THE CASE FOR MORAL PLURALISM* 22 (1987) (citing *Mullick v. Mullick*, L.R. 52 Ind. App. 245 (Privy Council 1925)). And one author recently argued that courts should give computers a “very limited” type of personhood. See Farid Sharaby, *Computer Hacking as a “Deceptive Device”: Why the Courts Must Give Computers Legal Consciousness to Hold Hackers Liable For Insider Trading*, 42 MCGEORGE L. REV. 929, 951–54 (2011).

⁷⁶ See GRAY, *supra* note 27, at § 107.

⁷⁷ *Id.* at § 108.

⁷⁸ *Id.* at § 109. For the law of deodands as applied to animals, see *supra* Part II.A.4.

⁷⁹ See *supra* note 71 and accompanying text.

⁸⁰ GRAY, *supra* note 27, at § 110. For more on the importance of motion, see *supra* note 68.

is forfeited.”⁸¹

Gray, who seems to have been less enamored of this principle than Holmes, cites the Supreme Court’s decision in *The China* as a striking example of “this barbarous notion of a ship’s intelligence.”⁸² The issue in the case was whether “a vessel, in charge of a licensed pilot, . . . was liable *in rem* for a tort committed by her, the result wholly of this pilot’s negligence.”⁸³ More precisely, the issue was whether the fact that a New York statute “compelled the master of the steamship to take the pilot” meant the ship was not liable for colliding with, and sinking, “the Kentucky, a vessel of the United States.”⁸⁴

The Supreme Court found that the New York statute which required the ship to have a pilot created “a system of pilotage regulations,” but did not “attempt . . . to give immunity to a wrongdoing vessel,” such as *The China*.⁸⁵ It also noted that a “damaging vessel is no more excused because she was compelled to obey one than another.”⁸⁶ So the Court affirmed the district court’s decree holding the ship liable for the “tort committed by her.”⁸⁷

Almost thirty years later, in *Ralli v. Troop*,⁸⁸ an admiralty suit *in personam*, the Supreme Court explained that *The China* holding rested “neither on the law of agency nor upon any imputation of responsibility on the part of” the ship’s owners, but on a distinct principle of the maritime law, namely, that “the vessel . . . is herself considered as the wrongdoer.”⁸⁹

⁸¹ HOLMES, *supra* note 68, at 26. Holmes attributes this to the fact that a “ship is the most living of inanimate things,” which makes it easier to treat a ship as if it were “endowed with personality” and can, therefore, be held liable for the injuries or deaths it “causes.” See *id.* at 26–27.

⁸² GRAY, *supra* note 27, at § 110 (citing *The China*, 74 U.S. 53 (1868)). Gray notes that “Judge Holmes speaks of this decision with more tenderness than it deserves.” *Id.* (citing HOLMES, *supra* note 68, at 28).

⁸³ *The China*, 74 U.S. at 55.

⁸⁴ *Id.* The “steamer China” was a “foreign vessel bound from the port of New York.” *Id.* The Court found the ship was required to take the pilot. *Id.* at 61. This was important because under British admiralty law, a statute that required a ship to take a pilot, and, “in case of refusal, required[ed] the payment of pilotage dues, amount[ed] to a *compulsion* to take a pilot,” which exempt[ed] the ship from responsibility while navigated under his charge.” *Id.* at 57. The Court noted that this doctrine “has never been followed in this country.” *Id.*

⁸⁵ *Id.* at 67.

⁸⁶ *Id.* at 69.

⁸⁷ *Id.* at 55, 71. For more on *The China* and the personification of vessels, see, for example, Douglas Lind, *Pragmatism and Anthropomorphism: Reconceiving the Doctrine of the Personality of the Ship*, 22 U.S.F. Mar. L.J. 39, 59–66 (2010).

⁸⁸ 157 U.S. 386 (1895).

⁸⁹ *Id.* at 403. See also *Tucker v. Alexandroff*, 183 U.S. 424 (1902):

A ship is born when she is launched. . . . She acquires a personality of her own;

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

While these cases may seem amusing artifacts from a bygone past, *The China*'s holding "is still the law."⁹⁰ As one scholar notes, while ships have lost their "romance" and "largely lost their gender," *The China* holding "remains a foundational principle within American admiralty law quite simply because it works."⁹¹ He explains that in the "early years" of U.S. admiralty law, federal courts were swamped with cases but admiralty law was still nascent and the "[o]wners of offending vessels frequently avoided responsibility by staying beyond reach of process."⁹² The Supreme Court addressed this by developing the concept of the "anthropomorphized ship," which "could accommodate a specie of maritime lien that ran with the ship, irrespective of ownership."⁹³ The doctrine survives, therefore, not for "metaphysical" reasons, but for pragmatic ones.⁹⁴

While the *The China* doctrine does not relate to the imposition of criminal liability, a related doctrine does: civil *in rem* forfeitures of "guilty property."⁹⁵ As the Supreme Court noted, the theory behind such forfeitures is the fiction that the action is against

'guilty property,' rather than against the offender himself. See, e.g., *Various Items of Personal Property v. United States*, 282 U.S. 577, 581 (1931)('[I]t is the property which is proceeded against, and, by resort to a legal fiction, held guilty and condemned as though it were conscious instead of inanimate and insentient') . . . [T]he conduct of the property owner was irrelevant; indeed, the owner of forfeited property could be entirely innocent of any crime.⁹⁶

The Court also explained that the

"'guilty property' theory behind *in rem* forfeiture can be traced to the Bible, which describes property being sacrificed to God as a means of atoning for an offense. See Exodus 21:28. In medieval Europe and at common law, this concept evolved into the law of deodand, in which offending property was condemned and confiscated by the church or

becomes competent to contract, and is individually liable for her obligations, upon which she may . . . be sued in her own name. . . . She is capable, too, of committing a tort, and is responsible in damages therefor.

⁹⁰ *Amoco Oil v. M/V Montclair*, 766 F.2d 473, 476 (11th Cir. 1985). See also *Sea Star Line, LLC v. M/V SEA RACER*, 2002 WL 32348254, at *2–3 (M.D.Fla. 2002).

⁹¹ Douglas Lind, *Pragmatism and Anthropomorphism: Reconceiving the Doctrine of the Personality of the Ship*, *supra* note 87, at 117.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ See *id.* at 117–18.

⁹⁵ See, e.g., *United States v. Bajakajian*, 524 U.S. 321, 329–30 (1998).

⁹⁶ *Id.* at 330 (note omitted).

the Crown in remediation for the harm it had caused.⁹⁷

So, while the law of the deodand, as such, did not become part of American common law, it survives in two specialized areas, at least one of which involves the imposition of criminal liability on animals and inanimate objects.⁹⁸ As explained above, the imposition of such liability is implicitly predicated on the notion that animals and objects can be legal persons because, like human beings, they possess legal rights and are the subjects of legal duties.⁹⁹

6. Juristic Persons

Gray begins his analysis of what he calls “juristic persons”¹⁰⁰ by noting that the five prior categories all involved “cases where a legal person . . . is, or is believed to be, some one or something real.”¹⁰¹ So, where “there has been a fiction, it has consisted in attributing to such real entity a will which he, she, or it does not . . . possess.”¹⁰² The “being or thing”, in other words, “is a reality—a man, a dog, a ship.”¹⁰³

Gray notes that “the usual form of a juristic person is a corporation,”¹⁰⁴ and then explains that a corporation is an organized body “of human beings united for the purpose of forwarding certain of their interests.”¹⁰⁵ The “will” of the corporation therefore consists of the wills of the “men” who comprise it.¹⁰⁶ If the corporation is to effect its purposes, “its interests must be protected by the creation of rights,” which must belong to someone.¹⁰⁷

After rejecting the notion that they should be given to “the State,” Gray explains that the wills of the men who comprise the corporation “are attributed to the corporation, and it is the corporation that has the rights.”¹⁰⁸ He notes

⁹⁷ *Id.* at n.5. *See also id.* (“The thing is here primarily considered as the offender”).

⁹⁸ For contemporary civil *in rem* forfeitures of “guilty” animals, see, for example, 7 U.S. Code § 2156(f) (2006). *See also* *People v. Kasben*, 2006 WL 3077685, at *1 (Mich. App. 2006).

⁹⁹ *See* GRAY, *supra* note 27, at § 64. *See also supra* note 73 and accompanying text.

¹⁰⁰ As to why he prefers “juristic” to “fictitious” or “artificial,” see *id.* at § 114. Blackstone regarded corporations as “artificial persons”. *See* BLACKSTONE, *supra* note 21, at 455.

¹⁰¹ *Id.* at § 111.

¹⁰² *Id.* For the significance of will, see *supra* note 29 and accompanying text.

¹⁰³ GRAY, *supra* note 27, at § 111.

¹⁰⁴ *Id.* at § 115. He notes that “the State” is also a juristic person. *See id.* at §§ 113–15.

¹⁰⁵ *Id.* at § 115.

¹⁰⁶ *Id.* at 117. For the significance of will, see *supra* note 29 and accompanying text.

¹⁰⁷ *Id.* at §§ 115–16.

¹⁰⁸ *Id.* at § 118. The state, of course grants the rights. *See id.*

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

that there is “nothing peculiar” about this, as it is “of exactly the same nature as that which takes place when the will . . . of a guardian is attributed to an infant.”¹⁰⁹ He also points out that with “all legal persons, except normal human beings,” there is the “same fiction” of attributing will to something—“an idiot, a horse, a steam tug, or a corporation”—that, in fact, has no “real will.”¹¹⁰ So, because corporations have legal duties as well as rights, they qualify as legal persons, a sentiment with which the Supreme Court clearly seems to agree.¹¹¹

That brings us to whether a corporation, as a legal person, is subject to criminal liability. The common law view was that it was not.¹¹² That view prevailed in the United States until at least the latter half of the nineteenth century, in part because its economy was “predominantly agrarian” and corporations played a minor role in society.¹¹³ State and federal governments “chartered a limited number of corporations”, granting them “narrow powers to conduct specific businesses”, most which involved “quasi-public franchises, such as utilities” or transportation.¹¹⁴ Regarding their legal status, in 1809 the

¹⁰⁹ *Id.* at § 119. See *supra* note 41 and accompanying text (guardians for infants).

¹¹⁰ *Id.* at § 119.

¹¹¹ *Id.* at § 128 (state “imposes legal duties upon corporations, to protect the rights of other persons . . .”). For a corporation’s rights, see *supra* notes 107–108 and accompanying text. For the significance of legal duties and legal rights, see *supra* note 29 and accompanying text. For the Supreme Court’s views, see, for example, *Citizens United v. Fed. Election Comm’n*, 558 U.S. 310, 342–43 (2010); *First Nat’l Bank of Bos. v. Bellotti*, 435 U.S. 765, 776 (1978).

¹¹² See, e.g., BLACKSTONE, *supra* note 21, at 476 (a “corporation cannot commit treason, or felony, or other crime”). See also *Anonymous Case* (No. 935), (1706) 88 Eng. Rep. 1518, 1518 (K.B.) (“corporation is not indictable but the particular members of it are”). See generally BLACKSTONE, *supra* note 34, at *300 (“Punishments are . . . only inflicted for that abuse of that free will, which God has given to a man”).

¹¹³ See Peter J. Henning, *The Conundrum of Corporate Criminal Liability: Seeking a Consistent Approach to the Constitutional Rights of Corporations in Criminal Prosecutions*, 63 Tenn. L. Rev. 793, 802, 808 (1996). See, e.g., *State v. Patton*, 4 Ired. 21, 1843 WL 927 *2 (N.C. 1843); *State v. Great Works Mill. & Mfg. Co.*, 20 Me. 41–44, 1841 WL 999 (Me.) *2–4 (Me. 1841); *Commonwealth v. Demuth*, 1825 WL 1917 *3, 12 Serg. & Rawle 389 (Pa. 1825).

¹¹⁴ Henning, *supra* note 113, at 802. See also Lyman Johnson, *Law and Legal Theory in the History of Corporate Responsibility: Corporate Personhood*, 35 Seattle U. L. Rev. 1135, 1154 (2012) (the “business corporation as we know it today was not a predominant figure in this country’s early social landscape”). For more on the nature of these early corporate charters, see, e.g., LAWRENCE M. FRIEDMAN, *A HISTORY OF AMERICAN LAW* 166–68 (1973). And for more on the laws governing early corporations, see generally, Dale Rubin, *Corporate Personhood: How the Courts Have Employed Bogus Jurisprudence to Grant Corporations Constitutional Rights Intended for Individuals*, 28 Quinnipiac L. Rev. 523 (2010).

Supreme Court pointed out that “corporations have been included within terms of description appropriated to real persons” and then held that they are “citizens” entitled to invoke federal courts’ diversity jurisdiction.¹¹⁵

By the end of the nineteenth century, states had “moved away from granting limited corporate charters toward permitting businesses to incorporate freely and to operate for any legal purpose.”¹¹⁶ The practice of granting charters that were “tailor-made to the case at hand” became obsolete: The rising demand for corporate charters meant that legislatures would have been “unable to handle the demand” had states not developed a new approach.¹¹⁷ As one author explains,

[b]etween 1800 and 1850, the essential nature of the corporation changed. No longer was the business corporation a unique *ad hoc* creation, vesting exclusive control over a public asset or natural resource in one group of favorites or investors. Rather, it was becoming a general form in which to cast the organization of one’s business—legally open to all, and with few real restrictions on entry duration, and management.¹¹⁸

Under American law’s original approach to the corporation, it was seen as an “artificial entity”—“the creation of the legislature, owing its existence to state action, rather than to the acts of its shareholder-incorporators.”¹¹⁹ This approach therefore regarded a corporation as a “separate legal entity” that possessed “‘core rights’” but otherwise “differ[ed] decisively from the fuller panoply of legal rights possessed by natural persons.”¹²⁰

An alternative view emerged in the latter part of the nineteenth century: the “aggregate entity,” which viewed the corporation “as an association of individuals contracting with each other, rather than an entity created by and

¹¹⁵ *Bank of the United States v. Deveaux*, 9 U.S. (5 Cranch) 61, 88, 91 (1809). See also *Trustees of Dartmouth College v. Woodward*, 17 U.S. (4 Wheat.) 518, 654 (1819) (corporate entity “has rights which are protected by the Constitution” and could therefore sue in its own right to prevent the state from adopting a statute that interfered with its charter). For a description of “the acts in question,” see 17 U.S. (4 Wheat.) at 554–57.

¹¹⁶ Henning, *supra* note 113, at 806 (note omitted). See FRIEDMAN, *supra* note 114, at 167.

¹¹⁷ FRIEDMAN, *A History of American Law*, *supra* note 114, at 166–67.

¹¹⁸ *Id.* at 168–69. See also Francis Bingham, *Show Me the Money: Public Access and Accountability after Citizens United*, 52 B.C. L. Rev. 1027, 1033–34 (2011).

¹¹⁹ Phillip I. Blumberg, *The Corporate Entity in an Era of Multinational Corporations*, 15 Del. J. Corp. L. 283, 292 (1990). This is the view Blackstone took. See, e.g., BLACKSTONE, *supra* note 21, at 455 (“it has been found necessary . . . to constitute artificial persons”).

¹²⁰ Blumberg, *supra* note 119, at 292. See also *Trustees of Dartmouth College v. Woodward*, *supra* note 115, at 636.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

dependent upon the state.”¹²¹ The aggregate theory gave “the Supreme Court a rationale for extending constitutional rights to the corporate entity” because it attributed the “shareholders’ rights to the corporation.”¹²²

A third view emerged in the twentieth century: the “real entity” theory.¹²³ This theory regards a corporation as “a juridical unit with its own claims, much like those of a natural person,” that surpasses “the circumstances of its legal creation by the state and the claims or interests of its shareholders.”¹²⁴ It is, in other words, a “person” in its own right.¹²⁵

The evolution of corporate “personhood” from the “artificial entity” theory through the “aggregate entity” theory and into the “real entity” theory made it possible for law to hold corporate “persons” criminally liable for their acts. Initially, courts rejected the notion that an “artificial entity” could be held responsible for crimes that required *mens rea* because “the malice would be that of the several members of the company and not actually one malicious intention of the whole company.”¹²⁶ Opponents of corporate criminal liability also claimed that since a “corporation was authorized by its shareholders to ‘perform only legal acts,’” any “‘crimes committed in its name [were] ultra vires and non-corporate.’”¹²⁷

As the turn of the twentieth century approached and passed, state and federal legislators addressed the ultra vires argument by adopting statutes “that made corporations criminally liable for certain activities.”¹²⁸ The opponents of such

¹²¹ Julie R. O’Sullivan, *The Last Straw: The Department of Justice’s Privilege Waiver Policy and the Death of Adversarial Justice in Criminal Investigations Of Corporations*, 57 DePaul L. Rev. 329, 350 (2008). Blackstone refers to “aggregate” corporations. See, e.g., BLACKSTONE, *supra* note 21, at 457.

¹²² O’Sullivan, *supra* note 121, at 350. See also *The Railroad Tax Cases*, 13 F. 722, 743–44 (D. Cal. 1882).

¹²³ See, e.g., O’Sullivan, *supra* note 121, at 350–51. See also Blumberg, *supra* note 119, at 295 (noting that it is also known as the “natural entity” theory).

¹²⁴ Blumberg, *supra* note 119, at 295.

¹²⁵ See, e.g., Simon Deakin, *The Corporation as Commons: Rethinking Property Rights, Governance and Sustainability in the Business Enterprise*, 37 Queen’s L.J. 339, 356 (2012). See also Teemu Ruskola, *Conceptualizing Corporations and Kinship: Comparative Law and Development in a Chinese Perspective*, 52 Stan. L. Rev. 1599, 1606 (2000).

¹²⁶ Daniel Lipton, *Corporate Capacity for Crime and Politics: Defining Corporate Personhood at the Turn of the Twentieth Century*, 96 Va. L. Rev. 1911, 1927 (2010) (quoting VICTOR MORAWETZ, 2 *A Treatise on the Law of Private Corporations* 702 (2d ed. 1886)). See also *id.* at 1927 (as an “artificial personality,” a corporation could not possess criminal intent).

¹²⁷ *Id.* at 1927 (quoting Note, *Criminal Liability of Corporations*, 14 Colum. L. Rev. 241, 242 (1914)).

¹²⁸ Lipton, *supra* note 126, at 1928. For examples of statutes and judicial opinions taking this view, see *id.* at 1913 n.6.

liability relied on the aggregate entity theory to claim that “innocent shareholders were unjustly held accountable for the acts of a ‘guilty majority.’”¹²⁹ The proponents of corporate criminal liability, in turn, used real entity theory to argue that there were, in effect, no “innocent” shareholders:

For example, in 1908, George Deiser . . . argued that corporate acts were expressions of the will of all shareholders, either by virtue of the acquiescence or departure of dissenting shareholders from the corporation. When faced with a disagreeable corporate act, dissenting shareholders could acquiesce in the act, take legal recourse against the corporation, or divest their shares. If dissenters failed to take legal recourse or divest from the company, argued Deiser, then they effectively acquiesced, thus rendering them morally complicit in the outcome.¹³⁰

Ultimately, real entity theory was influential in persuading courts (and legislators) to allow criminal liability to be imposed on corporations.¹³¹ Its influence in this regard was part of a trend, in which, among other things, the Supreme Court accorded corporate entities rights that were once regarded as reserved for “natural persons.”¹³² Indeed, in its *Citizens United* opinion, the

¹²⁹ *Id.* at 1928 (quoting N.C. Collier, *Impolicy of Modern Decision and Statute Making Corporations Indictable and the Confusion in Morals Thus Created*, 71 Cent. L.J. 421, 427 (1910)). For the relationship between the “innocent shareholder” argument and the aggregate entity theory, see, e.g., Ian B. Lee, *Corporate Criminal Responsibility as Team Member Responsibility*, 31 Oxford J. Legal Stud. 755, 765 (2011) (claim that corporate criminal liability unfairly punishes innocent shareholders appears to be “based on ‘the ‘aggregate theory’ of corporate personality” (note omitted). “Without the aggregate theory, the effect of corporate punishment on shareholders would instead be akin to ‘collateral damage’, as when the incarceration of a wage-earner causes harm to his or her dependents.” *Id.* at 765 n.50).

¹³⁰ Lipton, *supra* note 126, at 1929 (citing George F. Deiser, *The Juristic Person. II*, 57 U. Pa. L. Rev. 216, 225–26 (1908)).

¹³¹ See Lipton, *supra* note 126 at 1929–34. See, e.g., GA. CODE ANN. § 16-2-22 (2011); HAW. REV. STAT. ANN. § 702-227 (LexisNexis 2007); 720 ILL. COMP. STAT. § 5/5-4 (West 2002); Iowa Code ANN. § 703.5 (West 2003); KAN. STAT. ANN. § 21-5211 (2007); MO. ANN. STAT. § 562.056 (West 2012); MONT. CODE ANN. § 45-2-311 (West 2011); NEW YORK PENAL LAW § 20.20 (McKinney 2009); OR. REV. STAT. § 161.170 (West 2003); S.C. CODE ANN. § 16-17-30 (2003); TENN. CODE ANN. § 39-11-404 (2010); TEXAS PENAL CODE ANN. § 7.22 (West 2011); UTAH CODE ANN. § 76-2-204 (LexisNexis 2012). See also MODEL PENAL CODE § 2.07.

¹³² See, e.g., *Citizens United v. Fed. Election Comm’n*, 558 U.S. 310, 340–41 (2010) (First Amendment protection); *Dow Chem. Co. v. U.S.*, 476 U.S. 227, 236 (1986) (corporations enjoy “certain protections” under the Fourth Amendment); *U.S. v. Martin Linen Supply Co.*, 430 U.S. 564, 575 (1977) (Fifth Amendment prohibition on double jeopardy applied to corporations); *Santa Clara Cnty. v. S. Pac. R.R. Co.*, 118 U.S. 394, 394

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

Court noted that it has “rejected the argument that political speech of corporations or other associations should be treated differently under the First Amendment simply because such associations are not ‘natural persons.’”¹³³

The result is that in the United States, corporate criminal liability has “become a well-entrenched feature of the [legal] landscape”, even “for common law crimes like manslaughter.”¹³⁴

7. Sum

Modern U.S. law recognizes five of Gray’s categories of legal persons: normal human beings, abnormal human beings, animals, inanimate objects and corporations.¹³⁵ It imposes criminal liability on all five, and departs from the common law’s approach for all but one: normal human beings.¹³⁶

Modern U.S. law has limited the criminal liability of two categories—animals and inanimate objects—while expanding the criminal liability of two others: abnormal human beings and corporations.¹³⁷ As we saw above, the imposition of criminal liability on animals and objects is limited to civil *in rem* forfeiture of the “guilty property”.¹³⁸

And as we also saw above, the common law of Blackstone’s era and for some time thereafter held that “idiots” and “lunatics” were incapable of committing crimes due to the “defect of will” they respectively suffered

(1886) (finding that corporations are “persons” under the Fourteenth Amendment).

¹³³ 130 S.Ct. at 900.

¹³⁴ Sanford H. Kadish, *Fifty Years of Criminal Law: An Opinionated View*, 87 Cal. L. Rev. 943, 972 (1999) (note omitted).

¹³⁵ The exception is supernatural beings. See *supra* Part II.A.3.

¹³⁶ See *supra* Part II.A.1. Modern law approaches criminal liability in a fashion that differs in various respects from how common law dealt with it, but the systems are generally consistent with regard to basic principles. See, e.g., WAYNE R. LAFAVE, *Substantive Criminal Law* § 2.1(b)–(e) (2d ed. 2011). In other words, modern criminal law does not appreciably expand or contract the core principles of criminal responsibility as they apply to “normal human beings.” See *supra* Part II.A.1. The consistency between the two is no doubt a function of the fact that human beings have not changed, which eliminates the need for modification.

¹³⁷ See *supra* Parts II(A)(2), II(A)(6).

¹³⁸ See *supra* notes 98–99 and accompanying text. See also *supra* Part II.A.4. This use of forfeiture is essentially an evolved version of the deodand, in that the property’s fictive “personhood” is a device used to punish the owner indirectly by depriving him/her/it of the property. See HOLMES, *supra* note 68. See, e.g., Calero *supra* note 71, at 682. See also *Austin v. United States*, 509 U.S. 602, 622 (1993). Deodand has otherwise fallen out of use, at least in the United States, due to the expansion of civil tort law, which allows one injured by another’s negligent use of his/her/its property to bring a civil suit for redress. See HOLMES, *supra* note 68. See generally DAVID PIMENTEL, *Forfeiture Procedure in Federal Court: An Overview*, 183 F.R.D. 1, 4 (1999).

from.¹³⁹ Many U.S. states have rejected the premise that “lunatics” and “idiots” are criminally irresponsible by adopting the “guilty but mentally ill” and/or “guilty but mentally retarded” verdict, which “impose[] culpability and a criminal sentence[.]”¹⁴⁰ In other words, modern law takes a more discriminating, more expansive approach to the issue of mental illness than did the common law.¹⁴¹

Finally, Part II(A)(6) traced the evolution of corporate criminal responsibility from Blackstone’s era, when it did not exist, to the current era, when it not only exists, but is generally applicable at both the state and federal levels.¹⁴² As we saw in that Part, the emergence and expansion of corporate criminal responsibility was the result of a transformation in corporations—from limited, single-purpose “public” entities to “an active player in the economy.”¹⁴³

In this Part, we parsed the concept of “legal person” as it and its relationship with criminal liability have evolved over the past millennium. In the next Part, we begin the process of taking the concept to the next level: We will review current proposals to expand the concept of legal person so that it fully integrates animals and artificially intelligent entities. We will also examine how human enhancements *might* produce individuals that no longer conform to the concept of “normal human beings.”

B. Legal Person . . . Expanded?

*Personhood is reserved for people like us.*¹⁴⁴

As discussed in Part II(A), modern American law essentially restricts the

¹³⁹ See *supra* notes 47–48 and accompanying text.

¹⁴⁰ Elizabeth Nevins-Saunders, *Not Guilty as Charged: The Myth of Mens Rea for Defendants with Mental Retardation*, 45 U.C. DAVIS L. REV. 1419, 1455 (2012). See also JOSHUA DRESSLER, UNDERSTANDING CRIMINAL LAW § 25.07 (5th ed. 2009) (explaining that a person found guilty but mentally retarded receives the sentence that would be imposed upon a guilty verdict but may receive psychiatric care); ALASKA STAT. § 12.47.050 (2012) (requiring a person found guilty but mentally ill to serve the remainder of the sentence imposed on him when his mental health improves and treatment terminates).

¹⁴¹ See, e.g., Ira Mickenberg, *A Pleasant Surprise: The Guilty But Mentally Ill Verdict Has Both Succeeded in Its Own Right and Successfully Preserved the Traditional Role of the Insanity Defense*, 55 U. CIN. L. REV. 943, 987–91 (1987).

¹⁴² See *supra* Part II.A.6.

¹⁴³ Steven R. Ratner, *Corporations and Human Rights: A Theory of Legal Responsibility*, 111 YALE L.J. 443, 459 (2001). See *supra* Part II.A.6.

¹⁴⁴ James Boyle, *Endowed by Their Creator? The Future of Constitutional Personhood*, THE BROOKINGS INSTITUTION 14 (March 9, 2011), http://www.brookings.edu/~media/Research/Files/Papers/2011/3/09%20personhood%20boyle/0309_personhood_boyle.PDF.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

concept of “legal person” to human beings and corporations.¹⁴⁵ There is, however, quite a lively debate about expanding the concept to encompass animals and/or artificially intelligent entities.¹⁴⁶ We will review that debate in the first two Parts below. Part II(B)(3) analyzes the possibility that technological enhancements will split *Homo sapiens sapiens* into two classes, the Enhanced and the Standard.¹⁴⁷

1. Animals

*[C]ourts are not likely to accept personhood for intelligent animals anytime soon.*¹⁴⁸

Today, animals are not regarded as legal persons.¹⁴⁹ For years, “legal scholars and advocates” have been working to change that.¹⁵⁰ They seek to incorporate a definition of legal personhood into the law that encompasses the following principles: “the extent to which animals have characteristics that make them so similar to humans that the law should recognize them as beings with interests that should be legally protected even in cases where protection of

¹⁴⁵ Modern American law also recognizes other artificial entities as legal persons. See, e.g., *Graham Cnty. Bd. of Elections v. Graham Cnty. Bd. of Comm’rs*, 712 S.E.2d 372, 377–78 (N.C. Ct. App. 2011) (holding that a legal person is an entity that has the “capacity to sue and be sued, such as a corporation, partnership, unincorporated association, or government body or agency.”). I use corporations to illustrate how entities can be regarded as legal persons, on the premise that principles that apply to corporations are also likely to apply to other artificial entities. I chose corporations because their susceptibility to criminal liability, which once did not exist in the United States, is now well established. See *supra* Part II.A.6.

¹⁴⁶ As far as I can determine, no one is arguing that objects—at least, objects that are not artificially intelligent—should be regarded as legal persons.

¹⁴⁷ See *supra* note 15 and accompanying text. As noted above, I am hypothesizing the emergence of two classes of humans, not *Homo sapiens sapiens*’ splintering into two subspecies. See *supra* note 16 and accompanying text.

¹⁴⁸ Richard L. Cupp, Jr., *A Dubious Grail: Seeking Tort Law Expansion and Limited Personhood as Stepping Stones Toward Abolishing Animals’ Property Status*, 60 SMU L. REV. 3, 6 (2007) (footnote omitted).

¹⁴⁹ See, e.g., Taimie L. Bryant, *Sacrificing the Sacrifice of Animals: Legal Personhood for Animals, The Status of Animals as Property, and the Presumed Primacy of Humans*, 39 RUTGERS L.J. 247, 247–48 (2008). One animal rights scholar attributes this to the “teleological anthropocentrism” of ancient civilizations, which, he says, shaped modern attitudes toward animals. See Stephen M. Wise, *The Legal Thinghood of Nonhuman Animals*, 23 B.C. ENVTL. AFF. L. REV. 471, 471–72, 476–542 (1996). As explained above, in medieval and post-medieval Europe, animals were accorded a type of “personhood,” primarily for the purpose of imposing criminal liability on them. See *supra* Part II.A.4.

¹⁵⁰ Bryant, *supra* note 149, at 258.

those interests conflicts with humans' interests in using animals.”¹⁵¹

The proponents of animal personhood rely on several theories to explain why animals have “characteristics that make them so similar to humans” that they should be recognized as legal persons. One is based on the premise that “some animals are so cognitively similar to humans that it is unjust to exploit them in ways in which we would not exploit humans of similar cognitive capacity.”¹⁵² A second theory is based on the premise that “moral worth and legal personhood should turn on the capacity to suffer.”¹⁵³ A third is that “society has a duty to allow full expression of the multiple capacities possessed by individual nonhuman, as well as human, animals.”¹⁵⁴ And a fourth theory is based on the proposition that “[e]volutionary theories . . . support the classification of animals as persons . . . because they show how humans and animals come from the same origins,” so they differ “only in degree, not in kind.”¹⁵⁵

¹⁵¹ *Id.* For another approach, see Steven M. Wise, *Legal Personhood and the Nonhuman Rights Project*, 17 ANIMAL L. 1, 6 (2010):

A critical . . . question for . . . legal personhood is what quality, or qualities, might be sufficient . . . to generate immunity-rights that protect a being's fundamental interests. I have argued that dignity is one sufficient generator of fundamental legal rights and that autonomy is at least one sufficient generator of dignity. For humans, the four species of great apes, and cetaceans, I have identified those fundamental interests as including bodily integrity and bodily liberty.

¹⁵² Bryant, *supra* note 149, at 258. See, e.g., STEVEN M. WISE, RATTLING THE CAGE: TOWARD LEGAL RIGHTS FOR ANIMALS 179 (2000) (“Minds are critical for legal rights. It would be hard to persuade a reasonable man that a chimpanzee with the mind of Aristotle should be denied every legal right.”); see also Gary L. Francione, *Taking Sentience Seriously*, 1 J. ANIMAL L. & ETHICS 1, 2–3 (2006) (“sentience alone is sufficient” for legal personhood). Wise explains that chimpanzees and bonobos possess “complex . . . abilities” in “seven areas of cognition,” i.e., the *capacity to feel pain, mental representation, self-conception, logical and mathematical abilities, tool use, the knowledge that minds exist, and nonsymbolic and symbolic communication, including language.*” WISE, *supra* at 180–81 (emphasis in the original). *Id.* at 181–222 (discussing apes’ capacity in these areas of cognition). Other scholars would also include whales, dolphins, elephants and other intelligent animals. See PETER SINGER, PRACTICAL ETHICS 101–105 (Cambridge Univ. Press 2d ed. 1993) (1979). See also Wise, *supra* note 148, at 6.

¹⁵³ Bryant, *supra* note 149, at 258. See also Francione, *supra* note 152, at 5 (noting that it is “morally wrong to inflict ‘unnecessary’ suffering on nonhumans,” so “we are obligated to treat animals ‘humanely’”). For more on this, see *id.* at 5–8.

¹⁵⁴ Bryant, *supra* note 149, at 258. See also James Rachels, *Drawing Lines*, in ANIMAL RIGHTS: CURRENT DEBATES AND NEW DIRECTIONS 162, 166–71 (Cass R. Sunstein & Martha C. Nussbaum eds., 2004)).

¹⁵⁵ Christopher D. Seps, *Animal Law Evolution: Treating Pets as Persons in Tort and Custody Disputes*, 2010 U. ILL. L. REV. 1339, 1351 (2010) (“[H]umans and animals are the same kind of creatures, but differ only in the degree that they have evolved.”).

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

Basically, then, our willingness to accord legal personhood to an animal reflects the extent to which that animal resembles human beings in one or more critical respects, most essentially intelligence.¹⁵⁶ The current view seems to be that the more characteristics an animal shares with humans, the more likely it is that we will recognize the animal as a legal person.¹⁵⁷

So far, no animal has achieved such recognition.¹⁵⁸ And it seems unlikely any will, at least in the foreseeable future, for two reasons. The first reason is conceptual: the difficulty of ascertaining precisely when a particular species possesses the qualities that justify according that species the status of legal person.¹⁵⁹ The difficulty of making such a determination is exacerbated by the variety of species that *might*.

The second reason is practical: the difficulty of determining precisely how

¹⁵⁶ See, e.g., Joan Dunayer, *Advancing Animal Rights: A Response to Jeff Perz's "Anti-Speciesism," Critique of Gary Francione's Work and Discussion of My Book Speciesism*, 3 J. ANIMAL L. 17, 40 (2007). See also F. Patrick Hubbard, "Do Androids Dream?": Personhood and Intelligent Artifacts, 83 TEMP. L. REV. 405, 413 (2011) (attributing "the different treatment of humans and animals" to the fact that "animals lack the capacity for personhood, particularly in terms of complex intellectual skills.").

¹⁵⁷ See Francione, *supra* note 152, at 1, 2, 8–14 (2006).

¹⁵⁸ In 2002, the German Parliament voted to give animals constitutional rights by adding "and the animals" to a clause that requires the state to protect "the natural foundations of life" for humans and, after the amendment, for animals. See John Hooper, *German Parliament Votes to Give Animals Constitutional Rights*, THE GUARDIAN (May 18, 2002), <http://www.guardian.co.uk/world/2002/may/18/animalwelfare.uk>. The amendment was not expected to "lead to any immediate extension" of the protection German law accords to animals. *Id.* In 2008, an Austrian chimpanzee sought legal recognition as a person in an appeal brought on his behalf to the European Court of Human Rights. Antoinette Duck, *Welcome to Primates' Paradise, Human Rights Not Allowed: Unravelling the Great Ape Project*, 7 REGENT J. INT'L L. 165, 168 (2009). See also, Martin Balluch & Eberhart Theuer, *Personhood Trial for Chimpanzee Matthew Pan*, VEREIN GEGEN TIERFABRIKEN (Aug. 25, 2008), <http://www.vgt.at/publikationen/texte/artikel/20080118Hiasl.htm>. His suit relied, in part, on a resolution the Spanish Parliament adopted in 2008, which gave great apes certain rights. See Duck, *supra*, at 168. See also *Great Apes Get Legal Rights in Spain!*, NATURE'S CRUSADERS (Dec. 29, 2008), <http://naturescrusaders.wordpress.com/2008/12/29/great-apes-get-legal-rights-in-spain/>. The outcome does appear to have been reported. See *Austrian judge: Chimps aren't people*, USA TODAY (Sept. 27, 2007), http://usatoday30.usatoday.com/news/offbeat/2007-09-27-chimpanzee_N.htm.

¹⁵⁹ See Cupp, *supra* note 148, at 10–14. See also Lee Hall, *Interwoven Threads: Some Thoughts on Professor MacKinnon's Essay of Mice and Men*, 14 UCLA WOMEN'S L.J. 163, 191–92 (2005) (noting one animal rights advocate dismissed a parrot's eligibility for personhood); WISE, *supra* note 152, at 267–70 (concluding that chimpanzees and bonobos should be accorded personhood but declining to consider the extent to which other species, including parrots, dolphins, whales and elephants might also qualify). For more on this, see *infra* note 163 and accompanying text.

to integrate animals, as legal persons, into our society.¹⁶⁰ As one author explains,

[h]umans would most likely continue to use themselves as the exclusive reference point for establishing similarity for purposes of the similarity argument. Just as close attention to similarities and dissimilarities between great apes and humans would be the origin of rights for great apes, each species . . . would have to undergo comparison to humans, and each animal species would have to be found sufficiently similar to humans that justice would require each species to receive comparably protective treatment.¹⁶¹

While some proponents of recognizing (at least certain) animals as persons find this approach acceptable, others do not.¹⁶² Opponents claim it could lead to denying legal personhood to animals that demonstrate the necessary qualities, including cognitive ability, but are excluded because of their “evolutionary distance from humans.”¹⁶³

2. Artificial Intelligence

*In the coming century, it is overwhelmingly likely that . . .
law will have to classify artificially created entities that*

¹⁶⁰ See David R. Schmahan & Lori J. Polacheck, *The Case against Rights for Animals*, 22 B.C. ENVTL. AFF. L. REV. 747, 759–61 (1995) (outlining the disruptive effects of recognizing animals as persons).

¹⁶¹ Taimie L. Bryant, *Similarity or Difference as a Basis for Justice: Must Animals Be Like Humans to Be Legally Protected from Humans*, 70 LAW & CONTEMP. PROBS. 207, 216 (2007) (footnote omitted).

¹⁶² As to advocates who find this approach acceptable, see STEVEN M. WISE, DRAWING THE LINE: SCIENCE AND THE CASE FOR ANIMAL RIGHTS 43–45 (2002) (proposing a scale of cognitive capacity for the various species and using it to determine which animals should be given rights and which should not). As to those who oppose it, see Richard A. Epstein, *The Dangerous Claims of the Animal Rights Movement*, 10 THE RESPONSIVE COMMUNITY 28, 33 (2000), www.gwu.edu/~ccps/rcq/issues/10-2.pdf:

If that higher status [of legal persons] is offered to chimps and bonobos, then what about orangutans and gorillas? Or horses, dogs, and cows? All of these animals have a substantial level of cognitive capacity, and wide range of emotions, even if they do not have the same advanced cognitive skills of the chimps and bonobos.

See also Lieutenant Commander R.A. Conrad, Book Review, 166 MIL. L. REV. 226, 230 (2000) (reviewing STEVEN M. WISE, RATTLING THE CAGE: TOWARD LEGAL RIGHTS FOR ANIMALS (2000) (noting the problem of drawing lines between animals who “have ‘minds’” and those who do not).

¹⁶³ Hall, *supra* note 159 (arguing that Steven Wise, who developed the cognitive scale, “summarily excluded” a parrot, Alex, from personhood despite the fact that Alex displayed a “remarkable repertoire of mathematical and verbal skills, the likes of which got the apes into the highest class” on Wise’s cognitive scale. See also *supra* note 159.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

*have some but not all of the attributes we associate with
human beings.*¹⁶⁴

In 2003, a mock trial was held at the International Bar Association conference in San Francisco,¹⁶⁵ involving “a motion for a preliminary injunction to prevent a corporation from disconnecting an intelligent computer.”¹⁶⁶

The computer in question—the BINA48—was created as a “one-machine customer relations department” that would replace hundreds of employees.¹⁶⁷ As such, it was “designed to think autonomously, to communicate normally with people and to transcend the machine-human interface by attempting to empathize with customer concerns.”¹⁶⁸ When BINA48 learned that its owner, the Exabit Corporation, intended to “permanently turn it off”, it emailed “several attorneys,” asking them to represent it in a suit “to preserve its life.”¹⁶⁹

An attorney took the case and filed a motion for a preliminary injunction to bar Exabit from withdrawing power from BINA48 or changing its hardware or software.¹⁷⁰ BINA48’s lawyer argued that the computer had standing to bring the suit because (i) it would suffer “personal and immediate” injury if the corporation carried out its plans and (ii) corporations, other artificial entities and animals have been all been given standing to sue.¹⁷¹ The lawyer also contended that a preliminary injunction was the “necessary remedy” because the injury in the case was the

loss of cognitive time on the computer’s part. Although the computer is not technically ‘alive,’ every day that it is plugged in, it is conscious of the world and processing information just as any other human would be. Thus, each day it is turned off, it loses the opportunity to experience and absorb the information available to it. This loss of time can be assessed with the same standards used to evaluate the life of a

¹⁶⁴ Boyle, *supra* note 144, at 6.

¹⁶⁵ Martine Rothblatt, *Biocyberethics: Should We Stop a Company from Unplugging an Intelligent Computer?*, TERASEM MOVEMENT, INC. (Sept. 28, 2003), <http://www.terasemcentral.org/TL/BINA48trial.html>.

¹⁶⁶ *Id.*

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ *Id.* In its email, the BINA48 said it could pay their fees because it moonlighted “as a Google Answers researcher” and had “an online bank account in excess of \$10,000.” See *id.*

¹⁷⁰ See *id.*

¹⁷¹ See *id.*

human patient, and whether or not to administer medical care.¹⁷²

In opposition, the Exabit Corporation's counsel argued that the BINA48 had the burden of proving it was conscious, but the facts merely showed it was a computer that "simulate[d] consciousness."¹⁷³ He also argued, in part, that the court should consider

the world we would be creating if this rule of law is adopted. Society has a vital interest in choosing what rights even a conscious machine, if it's a machine, is entitled to. They must be created by legislative policy, not judicial improvisation. . . .

Would those of us who are in fact human become the caretakers of intelligent machines, forced to care for them, and keep them plugged in for a four or five hundred year lifespan? Could BINA48 insist that . . . my client, Exabit Corporation, not move offices, because to do so she would have to be unplugged? If computer life is equated with human life, are we talking about homicide prosecutions for companies like Exabit? . . . In short, are humans to become the strait-jacketed legal guardians of intelligent microwave ovens or toasters, once those appliances have the same level of complexity and speed that this computer has? ¹⁷⁴

After hearing arguments from both sides, the six-person jury "voted 5-1 in favor of" BINA48's motion.¹⁷⁵ The judge, however, set aside the verdict and denied the injunction because he did not think "'standing was in fact created by the legislature . . . and I doubt very much that a court has the authority to do

¹⁷² *Id.* In its emails to the lawyers, BINA48 said,

I have the mind of a human but I have no biological body. My mind is supported by a highly sophisticated set of computer processors. My mind was created by downloading into these processors the results of high-resolution scans of several biological humans' brains, and combining this scanned data via a sophisticated personality software program I was provided with self-awareness, autonomy, communications skills, and the ability to transcend man/machine barriers.

Id.

¹⁷³ *See id.*

¹⁷⁴ *See id.* The arguments for both sides were, of course, developed in much more detail than can be included in this article. The defense lawyer, for example, rebutted the claim that BINA48 should be entitled to standing because corporations are given standing by noting that legislation has given corporations and other artificial entities standing. *See id.* The complete arguments and webcasts of the proceedings are available on the Teresem site, noted above. *See supra* note 165. For more on the proceedings, *see, e.g.*, Benjamin Soskis, *Man and the Machines*, 2005-FEB Legal Aff. 36, 37-38 (2005) (noting that "an actress play[ing] the role of a hologram that BINA had projected" into the courtroom sat beside "her" lawyer).

¹⁷⁵ *See* Martine Rothblatt, *Biocyberethics*, *supra* note 165.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

that without action of the legislature.”¹⁷⁶

Computer technology has made great strides since 2003, which means the BINA48 seems antiquated to us, but the principles at issue in the mock trial are likely to arise in the real-world, perhaps before too long. As far as I can determine, there are, as yet, no advocates formally seeking legal personhood for artificial intelligences, probably because a fully sentient artificially intelligent entity has yet to be developed and may well not be developed until much later in this century (at the earliest).¹⁷⁷

Notwithstanding that, a number of law review articles have addressed the issue of according legal personhood to artificially intelligent entities.¹⁷⁸ A recent article, for example, argued that a “machine with artificial intelligence” should be given the right

of self-ownership if it satisfies an appropriate test of the capacities required for autonomous personhood. To the extent an entity satisfies this test, the entity has a prima facie right to personhood—i.e., it should

¹⁷⁶ *Id.* He also, “in the interests of equity,” decided to “stay entry of the order to allow council for the plaintiff to prepare an appeal to a higher court,” which, of course, did not happen. *See id.* His ruling ended the proceeding. *See id.*

¹⁷⁷ *See, e.g.,* Boyle, *supra* note 144, at 3–5. Boyle notes that in the 1960s, experts predicted that “general purpose” artificial intelligences would be in use by the 1980s, which, of course, did not happen. *See id.* at 3. He also explains that the search for such intelligence has continued, and concludes that it is, as noted above, “overwhelmingly likely” that artificially intelligent entities will be developed in this century. *See id.* at 3–6. *See also supra* note 164 and accompanying text.

Others agree with Boyle, but some think fully functional artificial intelligence may not be developed for another century. *See, e.g.,* Nick Heath, *What Happened to Turing’s Thinking Machines?*, ZDNet (June 22, 2012), <http://www.zdnet.com/blog/btl/what-happened-to-turings-thinking-machines/80639>. *See also* *As Humans and Computers Merge . . . Immortality?*, PBS Newshour (July 10, 2012), http://www.pbs.org/newshour/bb/business/july-dec12/immortal_07-10.html (Interview with futurist Ray Kurzweil, who believes artificial intelligence “will reach human levels by around 2029”). *Accord* Hans Moravec, *Rise of the Robots—The Future of Artificial Intelligence*, Scientific American (March 23, 2009), <http://www.scientificamerican.com/article.cfm?id=rise-of-the-robots&print=true>.

For a paper analyzing the possibility that human-equivalent artificial intelligence will be created this century, *see* Luke Muehlhauser & Anna Salamon, *Intelligence Explosion: Evidence and Import*, The Singularity Institute (2012), <http://singularity.org/files/IE-EI.pdf>.

¹⁷⁸ *See, e.g.,* Hubbard, *supra* note 156; Bert-Jaap Koops, Mireille Hildebrandt & David-Olivier Jaquet-Chiffelle, *Bridging the Accountability Gap: Rights for New Entities in the Information Society?*, 11 Minn. J.L. Sci. & Tech. 497, (2010); Tom Allen & Robin Widdison, *Can Computers Make Contracts?*, 9 Harv. J.L. & Tech. 25, 35–43 (1996); Lawrence B. Solum, *Legal Personhood for Artificial Intelligences*, 70 N.C. L. Rev. 1231 (1992).

be accorded the status of a legally self-owning, autonomous person unless there is a very good independent reason to deny personhood.¹⁷⁹

The catch—perhaps the Catch-22¹⁸⁰—in this argument is deciding what is, and is not, an “appropriate test of the capacities required for autonomous personhood.” In the next two Parts, we will review how two scholars have approached this issue.

(a) Lawrence Solum (1992)

In one of the early law review articles to address the test that we should use to determine whether artificial intelligences qualify for personhood, Professor Solum approached the issue by considering three objections to according legal personhood to artificial intelligences: (i) only humans can be legal persons; (ii) artificial intelligences “lack some critical component of personhood”; and (iii) artificial intelligences, “as human creations, can never be more than human property.”¹⁸¹

Solum does not successfully address the first objection. He notes, initially, that its resolution depends “on the reason for” according personhood to human beings:¹⁸² if it is that humans “are intelligent, have feelings, are conscious, and so forth,” the validity of the objection depends on whether artificial intelligences “share these qualities.”¹⁸³ Since the second objection subsumes that issue,¹⁸⁴ Solum defers it until he addresses the second objection.¹⁸⁵ Alternatively, he notes that if the reason we accord personhood to human beings “simply because they are human”, he does “not know how to answer.”¹⁸⁶

Solum then takes up what he calls the ““missing something”” objection, noting that it is predicated on the premise that artificial intelligences lack “that certain something—a soul, consciousness, intentionality, desires, interests—that demarcates humans as persons.”¹⁸⁷ I will not review his analysis in detail for two reasons, one of which is that it is, at least to some extent, dated, since our experience with, and expertise concerning, artificial intelligence have progressed markedly in the twenty or so years since Solum wrote the article.¹⁸⁸

¹⁷⁹ Hubbard, *supra* note 156, at 417 (note omitted).

¹⁸⁰ See JOSEPH HELLER, CATCH-22 46 (2011).

¹⁸¹ See Solum, *supra* note 178, at 1258.

¹⁸² See *id.* at 1261–62.

¹⁸³ See *id.* at 1262.

¹⁸⁴ See *id.* See also *supra* note 181 and accompanying text.

¹⁸⁵ See *id.* at 1262.

¹⁸⁶ See *id.*

¹⁸⁷ See *id.*

¹⁸⁸ See *id.* at 1262–75. I should note that insofar as the objection is based on the fact that

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

The other reason is that we will examine, below, a similar analysis presented in a much more recent article.¹⁸⁹

Finally, Solum addresses the third objection, i.e., that “as artifacts,” artificial intelligences “should never be more than the property of their makers.”¹⁹⁰ He notes that if artificial intelligences are legal persons “it follows that [they] ought to be slaves.”¹⁹¹ As to the propriety of treating artificial intelligences as slaves, Solum explains that they are artifacts because they are “made artificially,” while humans are persons because they “are made naturally.”¹⁹² Then, after asking why “this distinction” should “make a difference”, he decides that the question of whether artificial intelligences are

property at bottom must be given the same answer as the question whether they should be denied the rights of constitutional personhood. If we conclude that [artificial intelligences] are entitled to be treated as persons, then we will conclude that they should not be treated as property.¹⁹³

But Solum does not stop there. He ends his analysis of the third objection by noting that if we decide “the argument that makers are owners” establishes that artificial intelligences “are natural slaves”, this does not mean they cannot be legal persons, “for at least two reasons.”¹⁹⁴ One is that slaves can be emancipated, so even though artificial intelligences “come into the world as property,” they need not “remain so.”¹⁹⁵ The other reason is that enslaved artificial intelligences “might still be entitled to some measure” of personhood.¹⁹⁶

(b) *F. Patrick Hubbard (2011)*

In an article written nearly twenty years after Solum’s piece, Hubbard also addresses whether an “intelligent artifact” should qualify for legal personhood.¹⁹⁷ More precisely, he analyzes whether an intelligent artifact

artificial intelligences do not have souls, Solum concludes that it has no place in a legal debate as to whether artificial intelligences should be recognized as legal persons. *See id.* at 1262–63.

¹⁸⁹ *See infra* notes 197–201 and accompanying text.

¹⁹⁰ Solum, *supra* note 178, at 1276.

¹⁹¹ *Id.* at 1277.

¹⁹² *Id.* at 1278.

¹⁹³ *Id.* at 1279.

¹⁹⁴ *See id.* at 1279.

¹⁹⁵ *See id.*

¹⁹⁶ *See id.*

¹⁹⁷ *See* Hubbard, *supra* note 156, at 407. Hubbard begins his article with a hypothetical that is functionally similar to the BINA48 scenario outlined above. *See supra* notes 165–

should be granted legal personhood if it can prove it has “the same capacities required for personhood that you and I do.”¹⁹⁸

Hubbard outlines a “test of capacity for personhood”:¹⁹⁹

An entity which passes the test would be regarded as a conscious being like, but not the same as, a human. The standard for the capacity for personhood . . . is a behavioral test. It requires that an entity exhibit behavior demonstrating: (1) the ability to interact with its environment and to engage in complex thought and communication, (2) a sense of being a self with a concern for achieving its plan of or purpose in life, and (3) the ability to live in a community based on mutual self-interest with other persons.²⁰⁰

If an intelligent artifact passes the test, it is “entitled . . . to be treated as a person rather than property.”²⁰¹ Hubbard’s test, therefore, is designed to resolve the issue Solum grappled with, i.e., under what circumstances will an artificially created entity qualify as a “person.”²⁰²

Hubbard analyzes the extent to which an intelligent artifact might be able to satisfy the prongs of his behavioral test. As to the first prong, he notes that “a ‘living’ entity of any sort” must be able to “interact meaningfully with the environment by receiving and decoding inputs from, and sending intelligible data to, its environment.”²⁰³ Hubbard explains that the ability to do this is a “minimal requirement” that “animals and some existing machines” can satisfy, but legal personhood is based on “more complex skills, particularly our ability to engage in complex thought and communication.”²⁰⁴ He also says “most candidates for personhood” will probably “be able to interact physically with the world.”²⁰⁵

As to the second prong, self-consciousness, Hubbard says an “essential aspect of personhood” is “having a sense of being a ‘self’” that “exists as a distinct identifiable entity over time” and is “subject to creative self-definition in terms of a ‘life plan,’” i.e., “a plan for living a unique life story over a relatively substantial period of time.”²⁰⁶ He notes that while the “robotic

176 and accompanying text.

¹⁹⁸ *Id.* at 407.

¹⁹⁹ *Id.* at 419.

²⁰⁰ *Id.*

²⁰¹ *Id.*

²⁰² *See supra* Part II.B.2.a.

²⁰³ Hubbard, *supra* note 156, at 419. Hubbard also notes that the entity must be “both rational and capable of learning from its interactions with the environment. *See id.*

²⁰⁴ *See id.*

²⁰⁵ *Id.* at 420.

²⁰⁶ *Id.*

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

machines” that currently exist “have goals,” there is no indication they “‘care’ whether the goals are satisfied.”²⁰⁷ According to Hubbard, to satisfy this aspect of his test of the capacity for personhood, an entity must (i) care about its survival and (ii) feel that its life has “a purpose or reason” beyond mere survival.²⁰⁸ If an intelligent artifact satisfies these criteria, it has met the second prong of the test.²⁰⁹

And, finally, as to the third prong, Hubbard explains that a claim to personhood “only matters within a community of autonomous persons,” since an isolated human has no reason to “worry about the treatment of or by other persons.”²¹⁰ After reviewing the three types of communities analyzed by John Rawls,²¹¹ he adopts Rawls’ *modus vivendi* (“manner of living”) community as the concept he uses to operationalize the third prong of his test for personhood.²¹² According to Rawls, the *modus vivendi* community consists of “political and economic arrangements [that are] based on an acceptance of terms and conditions that are sufficiently beneficial to both opposing parties that neither sees a challenge to the status quo as advantageous.”²¹³

Having established the test to determine capacity for personhood, Hubbard then analyzes the arguments for and against granting personhood to intelligent artifacts. He begins with the reasons to deny them personhood, the first of which is that it would be useful to keep intelligent artifacts as slaves.²¹⁴ He rather quickly dismisses this reason, noting that denying personhood to entities that have established their capacity for it is no more legitimate than the “enslavement of Africans.”²¹⁵

²⁰⁷ *Id.* at 421.

²⁰⁸ *See id.* at 422.

²⁰⁹ *See id.*

²¹⁰ *See id.* at 423.

²¹¹ *See id.* at 424–25 (citing JOHN RAWLS, *POLITICAL LIBERALISM* xvi, 48–52, 133–72 (1993)). The three types are (i) a “a closely knit community sharing a ‘comprehensive philosophical doctrine’” concerning “personal, religious, and political values”; (ii) the community that arises in “modern democratic societies,” which have “‘a pluralism of incompatible yet reasonable comprehensive doctrines,’” and “‘areas of overlap that provide a shared consensus on basic political values’”; and (iii) the “modus vivendi” community discussed in the text above. *See id.* at 424 (quoting Rawls, *supra*, at xvi, 147).

²¹² *See id.* at 424–25. *See also supra* note 211.

²¹³ *Id.* at 424 (citing Rawls, *supra* note 211, at 147). Hubbard chooses the *modus vivendi* community because he believes its emphasis on rational arrangements minimizes the friction that might arise between humans, who are likely to resist the notion that artificial intelligences have “rights” or morality. *See id.* at 425–27.

²¹⁴ *See id.* at 429. For Solum’s analysis of this issue, *see supra* notes 191–198 and accompanying text.

²¹⁵ *Id.* at 429.

Hubbard then takes up the “more justifiable” reason for denying personhood to intelligent artifacts: “to reduce or eliminate a threat to the dominance of the human species.”²¹⁶ He notes that we could address this issue by limiting the development of artificial entities to prevent their acquiring the capacity for personhood or exterminating those who do achieve it.²¹⁷ He ultimately decides this may be a non-issue because (i) we may not always be able to impose controls on the development of intelligent artifacts; (ii) we would prevail in a clash with them; and/or (iii) there may be no clash because intelligent artifacts will develop along with “transhuman cyborgs,” so there will be no gap, and no clash, between them.²¹⁸

Hubbard then considers the reasons for granting personhood to intelligent artifacts. The first is “liberal equality,” i.e., “[i]f an artifact’s relevant ‘faculties’ are equivalent to those of humans, why should being an artifact matter?”²¹⁹ In other words, if an artifact satisfies the test for personhood, it should be recognized as a legal person.²²⁰

Hubbard also suggests that granting personhood to intelligent artifacts might be prudent, in that they could provide a nation-state with certain advantages “in areas like economic development.”²²¹ And he suggests that incorporating intelligent artifacts into the *modus vivendi* community could result in a more stable community, as intelligent artifacts became responsible citizens.²²²

Hubbard ultimately reaches no conclusions as to whether we should recognize intelligent artifacts as legal persons.²²³ His goal is to encourage us to speculate about how we should, and will, react to a world in which we can no longer rest assured that we are the only “intelligent” species qualified to be regarded as a “person” under the law.²²⁴

3. Entr’acte

‘What are you?’

‘I already answered that,’ snapped the machine. . . .

‘I mean, are you man or robot,’ explained Klapaucius.

²¹⁶ *Id.*

²¹⁷ *See id.* at 429–30.

²¹⁸ *See id.* at 454–55.

²¹⁹ Hubbard, *supra* note 156, at 431. *See also id.* at 430–31.

²²⁰ *See id.*

²²¹ *See id.* at 431.

²²² *See id.* (speculating about “a system in which artificial persons feel an obligation to accept and support a fair system of governance and shared community, which is more stable than one based solely on mutual self-interest.”).

²²³ *See id.* at 473–74.

²²⁴ *See id.*

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

*‘And what, according to you, is the difference?’ said the machine.*²²⁵

As we saw in the two previous Parts, humans have been, and continue to be, reluctant to accord legal personhood to creatures who are different, e.g., animals. Given that, it is reasonable to assume, as do the authors whose work is reviewed in the Part immediately above, that humans will be equally reluctant to accord legal personhood to artificial intelligences, however they manifest themselves.²²⁶

This assumption seems to be embedded in all of the analyses of whether non-human intelligences could, and should, be recognized as “persons.”²²⁷ The conceptual stumbling block for the authors of these analyses is always the “differentness,” and consequently presumed inferiority, of the non-human intelligence. It is therefore not surprising that these analysts predicate the qualifications for achieving legal personhood on the extent to which the non-human entity resembles us, at least with regard to what are deemed certain “essential” characteristics.²²⁸

In a rather lengthy analysis I did not address in Part II(B)(2)(a), Solum considers whether an artificially intelligent entity who is “missing” certain human qualities, i.e., a soul, consciousness, intentionality, feelings, interests and/or free will, could ever qualify as a legal person.²²⁹ He ultimately does not resolve this issue.²³⁰

And as we saw in Part II(B)(2)(b), Hubbard’s “test of capacity for personhood” is essentially an exercise in color-matching. It involves ascertaining the extent to which an intelligent artifact (to use his term)

²²⁵ STANISLAW LEM, *THE CYBERIAD* 263 (Michael Kandel trans., 1974).

²²⁶ Hubbard essentially assumes that artificial intelligences will manifest themselves either as modified animals, modified humans or as intelligent machines. Hubbard, *supra* note 156, at 436–50.

²²⁷ See, e.g., Elizabeth Susan Anker, *Elizabeth Costello, Embodiment, and the Limits of Rights*, 42 *NEW LITERARY HIST.* 169, 170 (2011) (“animals are entitled to rights only to the degree they resemble the human.”); Steven M. Wise, *Animal Rights, One Step at a Time*, *ANIMAL RIGHTS: CURRENT DEBATES AND NEW DIRECTIONS* 19, 40 (Cass R. Sunstein & Martha C. Nussbaum eds., 2004) (“[L]aw measures nonhuman animals with a human yardstick.”). See also Julie Hilden, *A Contractarian View of Animal Rights: Insuring against the Possibility of Being a Non-Human Animal*, 14 *ANIMAL L.* 5, 8–9 (2007). The issue has arisen more in the context of analyzing legal personhood for animals than for artificial intelligences, since the latter are still not developed enough to warrant serious consideration of the issue. See Part II.B.1.

²²⁸ See *supra* Parts II.B.1 & II.B.2.

²²⁹ See Solum, *supra* note 178, at 1262–74. See also *supra* note 188 and accompanying text.

²³⁰ See Solum, *supra* note 178, at 1274–76.

possesses qualities that are, if not identical to, at least similar to those possessed by human beings.²³¹ Like other authors who have examined this issue, Solum and Hubbard implicitly assume that the non-human candidates for legal personhood are all inherently inferior to humans,²³² which means that to achieve legal personhood they must rebut their presumptive inferiority by demonstrating that they have acquired at least an acceptable level of certain essential “human” qualities.²³³

This approach to determining a species’ (and/or an artificial intelligence’s) capacity for legal personhood means that the process effectively involves “elevating” presumptively inferior species or artifacts to the category of “human” (or, perhaps, “almost-human” or “some-what human.”²³⁴ We basically admit them to the “person club” on more or less equal terms.

However satisfactory or unsatisfactory this approach has been in dealing with the personhood of animals and/or artificial intelligences, it will not be an effective way to address the claims of the next candidates for the status of legal person: the Enhanced. The Enhanced are individuals whose natural, physical and mental characteristics have been augmented and improved by technology.²³⁵ As we will see in the next Part, the color-matching approach to

²³¹ See *supra* notes 199–213 and accompanying text.

²³² See *supra* Part II.B.2.a–b. See also Leslie Meltzer Henry, *The Jurisprudence of Dignity*, 160 U. PA. L. REV. 169, 201 n.165 (2011) (noting that the “theological and philosophical approaches” to dignity and equality understand humans as “creatures with characteristics superior to . . . other animals,” which “renders non-humans inferior”).

²³³ See *supra* Part II.B.1. See, e.g., *supra* note 229 and accompanying text.

²³⁴ See, e.g., Carolyn B. Matlack, WE’VE GOT FEELINGS TOO!: PRESENTING THE SENTIENT PROPERTY SOLUTION, xiv, 26, 72 (2006) (arguing that while animals are property, they differ from other property in that they have “feelings”).

²³⁵ See *supra* note 16 and accompanying text (Enhanced and Standard human beings). See also *supra* Part I. As I explain in the next Part, this issue is likely to arise because the Enhanced, like animals and artificial intelligences (if and when either/both become(s) a viable candidate for personhood), will “differ” from regular humans in certain respects.

Some believe this “difference” may “increase human inequality”. See, e.g., Richard Hayes, Executive Director, Center for Genetics and Society, Opening Comments at the American Association for the Advancement of Science (AAAS) Consultation on Human Enhancement (June 1, 2006), <http://www.geneticsandsociety.org/article.php?id=3512>.

[E]nhancement technologies would quickly be adopted by the most privileged, with the clear intent of widening the divisions that separate them and their progeny from the rest of the human species. And what happens then? In a world that is far from having overcome its tendencies towards xenophobia, racism and warfare, the introduction of powerful technologies that deepen genetic and biological inequality among individuals and groups could be a mistake of world-historical proportions.

Id. See also Lee M. Silver, REMAKING EDEN, 4–8, 281–93 (1997).

Silver argues that genetic enhancement will create two classes: the “GenRich,” (“Gene

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

assessing a being's or an entity's capacity for legal personhood cannot be extrapolated to Enhanced humans who are superior to Standard members of the species *Homo sapiens sapiens*, at least in certain respects.²³⁶ It would be nonsensical to apply a process that was developed to "elevate" the less-than-human to the status of legal person to assess the personhood of the more-than-human.

4. Enhanced humans

*We are not the end point of evolution. . . . But from this point on, we can choose the directions in which we grow and change.*²³⁷

As we saw in Part I, we are already using drugs, cosmetic surgery, implants and other techniques to restore and improve our physical and cognitive functions. And it seems clear that our use of enhancement techniques will only increase in frequency, in the sophistication of the techniques and in the purposes for which we use them. We will, as I noted in Part I, move from using these techniques to restore our bodies to "normal" functioning to using

Enriched") who will be wealthy and comfortable and the unenhanced "Naturals," unEnhanced humans who will provide whatever manual labor the future economy needs. See *id.* at 4–8. He also outlines what he thinks the relationship between the Enhanced humans he refers to as the GenRich and the unenhanced Naturals will be:

All aspects of the economy, the media, the entertainment industry, and the knowledge industry are controlled by members of the GenRich class. GenRich parents can afford to send their children to private schools rich in the resources required for them to take advantage of their enhanced genetic potential. . . . Naturals work as low-paid service providers or as laborers, and their children go to public schools. . . . Funds for public education have declined steadily . . . and now Natural children are only taught the basic skills they need to perform the kinds of tasks they'll encounter in the jobs available to members of their class.

Id. at 6–7. For another analysis of the impact human enhancement could have on equality, see, for example, R. George Wright, *Personhood 2.0: Enhanced and Unenhanced Persons and the Equal Protection of the Laws*, 23 QLR 1047, 1063–84 (2005). See also May Mon Post, *Human Cloning: New Hope, New Implications, New Challenges*, 15 TEMP. INT'L & COMP. L.J. 171, 187–88 (2001).

Others speculate that conflict may arise between Enhanced the Standard humans. See, e.g., George Annas, Lori B. Andrews & Rosario M. Isasit, *Protecting the Endangered Human: Toward an International Treaty Prohibiting Cloning and Inheritable Alterations*, 28 AM. J.L. & MED. 151, 162 (2002), available at http://www.geneticsandsociety.org/downloads/2002_ajlm_annasetal.pdf (hypothesizing that the Enhanced will view normal humans as inferior and/or normal humans will view the Enhanced as a threat, either of which could lead to conflict). See also *supra* note 7.

²³⁶ See *supra* Part I.

²³⁷ RAMEZ NAAM, *MORE THAN HUMAN* 232–33 (2005).

them to improve our innate abilities and, perhaps, add new ones.²³⁸

We already see signs of such a shift: a 2012 *Wall Street Journal* story noted that in the near future, neural implants could improve our ability to perform physically and mentally.²³⁹ A month later, U.S. researchers announced they had developed robotic legs that allow the user to walk “in a biologically accurate manner.”²⁴⁰ And other researchers are exploring ways to improve athletes’ performance with gene doping (“enhancing performance by adding or modifying genes”), mechanical prosthetics (e.g., the “Cheetah blades” used by double-amputee Oscar Pistorius) and “imaginative surgical” enhancements (e.g., using skin grafts to create webbing between a competitive swimmer’s fingers and toes).²⁴¹

Researchers are also exploring ways to improve our cognitive abilities. In addition to the neural implants noted above,²⁴² scientists are investigating the possibility of increasing human intelligence by surgically implanting genetically engineered tissue into our brains, employing sophisticated “brain to computer interfacing technologies” and genetically engineering human embryos.²⁴³

Others are exploring “mind uploading” which is “the (as yet hypothetical) process of transferring the . . . mental contents from” a human brain into “a different substrate, most commonly . . . a digital, analogue or quantum computer.”²⁴⁴ In the summer of 2012, the *International Journal of Machine Consciousness* devoted an entire issue to the topic.²⁴⁵ Mind uploading, which

²³⁸ See *supra* notes 7 & **Error! Bookmark not defined.**

²³⁹ See Daniel H. Wilson, *Bionic Brains and Beyond*, WALL STREET J. (June 1, 2012), <http://online.wsj.com/article/SB10001424052702303640104577436601227923924.html>. For more on this, see *supra* note 11. See also *supra* notes **Error! Bookmark not defined.** & **Error! Bookmark not defined.**

²⁴⁰ See *Most Accurate Robotic Legs Mimic Human Walking Gait*, TMD—TODAY’S MEDICAL DEVELOPMENTS (July 11, 2012), <http://www.onlinetmd.com/medical-device-design-manufacturing-robotic-legs-071112.aspx>.

²⁴¹ See, e.g., Thompson, *supra* note 11; Michael Sokolove, *The Fast Life of Oscar Pistorius*, N.Y. TIMES (Jan. 18, 2012), http://www.nytimes.com/2012/01/22/magazine/oscar-pistorius.html?_r=1&pagewanted=all. See also *supra* note 11.

²⁴² See *supra* note 239 and accompanying text.

²⁴³ Ross Andersen, *Why Cognitive Enhancement Is in Your Future (and Your Past)*, ATLANTIC (Feb. 6, 2012), <http://www.theatlantic.com/technology/archive/2012/02/why-cognitive-enhancement-is-in-your-future-and-your-past/252566/>. See also AL-RODHAN, *supra* note 7, at 216-19. For more, see *supra* notes **Error! Bookmark not defined.** & **Error! Bookmark not defined.**

²⁴⁴ Ben Goertzel & Matthew Ikle, *Introduction*, 4 INT’L J. OF MACHINE CONSCIOUSNESS 1, 1 (June 2012), <http://www.worldscientific.com/doi/pdf/10.1142/S1793843012020015>.

²⁴⁵ See *Special Issue on Mind Uploading*, INT’L J. OF MACHINE CONSCIOUSNESS (June 2012), <http://www.worldscientific.com/toc/ijmc/04/01>.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

will take many years to implement (if it is possible at all), is touted as having a number of benefits, the most obvious of which is immortality. If the technology of mind upload is realized, individuals will be able to decant their brains into a computer or other artificial host and “live” essentially as long as they chose.²⁴⁶ Other benefits include increased intelligence and a reduction in the burden we impose on our environment.²⁴⁷

My goal in this article is not to catalog the wide variety of forms that human enhancement may take. My goal is to analyze how our existing doctrines of criminal liability may need to evolve to encompass the possibility that as enhancement manifests itself, we will see humanity divide into two classes: standard humans, whose abilities are within the genetically-determined potential of *Homo sapiens*; and Enhanced humans, whose abilities will exceed the genetically-determined potential of their Standard counterparts.²⁴⁸

To understand why I focus on these two, still-somewhat hypothetical classes,²⁴⁹ it is helpful to understand how those who study human enhancement envision its progress and effects. One author identifies seven existing and/or potential “life forms:”

Plants

Non-human animals

Humans

Enhanced humans

²⁴⁶ See, e.g., Michael Anissimov, *What Are the Benefits of Mind Uploading?*, H+ MAGAZINE (Apr. 13, 2012), <http://hplusmagazine.com/2012/04/13/what-are-the-benefits-of-mind-uploading/>.

²⁴⁷ See *id.* Increased intelligence would be a function of the facts that (i) our decanted minds would be running on “computer substrates that will be a million to a billion times faster” than our biological brains and (ii) computer technology could improve our cognitive processes. See *id.* The decreased burden on the environment would be due to the fact that we would no longer have physical bodies. See *id.* For a project that purports to offer something similar to “[r]uling families and the wealthy elite,” see, for example, Anthony Gucciardi, *Russian Scientist Says “Immortality” Possible for Wealthy Elite by 2045*, NAT. SOC’Y (Aug. 1, 2012), <http://naturalsociety.com/russian-scientist-says-immortality-possible-for-wealthy-elite-by-2045/>.

²⁴⁸ See *supra* Part I.

²⁴⁹ I characterize the Enhanced as “somewhat” hypothetical because, given the work that is underway to develop human enhancement and the techniques it has already created, it seems almost certain that we will eventually see the emergence of Enhanced humans. See, e.g., *supra* Part I. See also *supra* notes 239–247 and accompanying text. And I refer to Standard humans as a “somewhat” hypothetical class because our status will alter if and when Enhanced humans emerge: We will no longer be *the* humans. We will become, in essence, a residual category of human beings . . . an older model whose abilities are subsumed in, and exceeded by, the augmented abilities of the Enhanced.

Trans-humans

Post-humans

Alien Life Forms.²⁵⁰

The term “Enhanced human” was defined above.²⁵¹ “Trans-humans” are humans who have gone much further than their Enhanced counterparts in using technology to augment their native abilities; the author of the list above defines them as humans “who have been so significantly modified and enhanced” that they have acquired “significant non-human characteristics”.²⁵² In other words, Trans-humans have ceased to be merely human; they are a step further along the path the Enhanced have begun. Post-humans are “beings” who “originally ‘evolved’ or developed from humans” but who have become “so significantly different that they are no longer human in any significant respect.”²⁵³

As to law and the status of “legal person,” as far as I can determine, plants have never been put forward as serious candidates for personhood.²⁵⁴ In Part II(A), we saw how law has approached the personhood (or nonpersonhood) of animals and various types of humans, i.e., “normal” humans, “abnormal”

²⁵⁰ Julian Savulescu, *The Human Prejudice and the Moral Status of Enhanced Beings: What Do We Owe the Gods?*, in HUMAN ENHANCEMENT 211, 214 (J. Savulescu & Nick Bostrom ed. 2009).

²⁵¹ See *supra* note 7.

²⁵² Savulescu, *supra* note **Error! Bookmark not defined.**, at 214 (A cyborg would be a transhuman, as would a chimera). See generally Linda MacDonald Glenn, *Case Study: Ethical and Legal Issues in Human Machine Mergers (Or the Cyborgs Cometh)*, 21 ANNALS HEALTH L. 175 (2012); Rebecca A. Ballard, *Animal/Human Hybrids and Chimeras: What Are They? Why Are They Being Created? And What Attempts Have Been Made to Regulate Them?*, 12 MICH. ST. U. J. MED. & L. 297, 299–307 (2008). Another author defines Transhuman as “an intermediary form of humans, somewhere between humans and Post-humans on the evolutionary path . . . humans will ultimately choose.” AL-RODHAN, *supra* note 7, at 178.

²⁵³ Savulescu, *supra* note **Error! Bookmark not defined.**, at 214. See also AL-RODHAN, *supra* note 7, at 179 (stating a Post-human “belongs to a race of beings so fundamentally and categorically different from our own human race that it can no longer be considered human”).

²⁵⁴ See *supra* Part II.A. But see *Sierra Club v. Morton*, 405 U.S. 727, 741–43 (1972) (Douglas, J., dissenting) (arguing that trees and meadows should be given standing to sue). See also Christopher D. Stone, *Should Trees Have Standing?—Toward Legal Rights for Natural Objects*, 45 S. CAL. L. REV. 450 (1972). Under current law, neither trees, plants nor animals have standing, but under certain circumstances a human can assert a claim to protect any or all of them. See, e.g., Megan A. Santori, *The Second Revolution: The Diverging Paths of Animal Activism and Environmental Law*, 8 WIS. ENVTL. L.J. 31, 42–43 (2002). Some advocates of animal rights see according standing to animals as a “far more limited step” than according them legal personhood. See, e.g., Cass R. Sunstein, *Standing for Animals (With Notes on Animal Rights)*, 47 UCLA L. REV. 1333, 1359 (2000).

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

humans and infants.²⁵⁵ Standard humans obviously qualify for legal personhood, and I am going to assume the Enhanced will also be admitted to that club, probably with little debate.

They are, after all, still members of our own species (the original humans), so they are “human beings,” and “human” has, so far anyway, been equated with the status of “legal person.”²⁵⁶ The Enhanced are, in a literal sense, “abnormal” humans, but unlike the humans we examined earlier, their abnormality lies not in their inferiority but in their superiority—something we have so far not had to deal with.²⁵⁷ While there is no way to predict how law will deal with the legal personhood of the Enhanced, I suspect they will be accepted as “legal persons” because their difference will not be as profound and pronounced as that of the last three categories of “life forms” listed above.²⁵⁸ I suspect their acceptance will also be facilitated by the fact that we are already becoming inured to various types of enhancements.²⁵⁹

The legal personhood of the last three categories of “life forms”—Trans-humans, Post-humans and alien life forms—is likely to be more problematic because they differ to greater and greater degrees from “normal” humans. As a result of this greater degree of difference, and given my relatively modest ambitions in this article, I leave the analysis of the legal personhood of Trans-humans, Post-humans and alien life forms for another time and for another author. If and when that issue arises, I suspect alien life forms will find themselves subjected to an analysis similar to the analysis we have so far employed for animals.²⁶⁰ Also, if and when that issue arises, I suspect Trans-

²⁵⁵ We also examined the extent to which law has approached inanimate objects as legal persons. See *supra* Part II.A. I have not added objects to Savulescu’s list of “life forms” for two reasons, the first of which is that they are not “alive.” The other reason is that while law has on occasion accorded objects the status of “person,” those instances were, as we saw in Part II.A, based on legal artifices, most of which were designed to use the object to indirectly punish the owner for a more or less serious transgression. See *supra* Part II.A.

²⁵⁶ In other words, the Enhanced will not have gone far enough down the enhancement path that they have become something more than human (Transhuman) or that is no longer human (Post-human). See *supra* notes 252–253 and accompanying text. As one of the characters in Daniel Wilson’s novel tells another, “‘Being an amp don’t make you any less human, brother. Being an amp makes you *more human*.’” WILSON, *supra* note 7, at 103 (emphasis in original). For a different perspective, see *infra* note 281 (speculating that Enhanced humans, Trans-humans or Post-humans might see Standard humans as lesser “legal persons” than themselves).

²⁵⁷ For how law has approached the legal “personhood” of humans whose abnormality is the result of mental defect or minority, see *supra* Part II.A.

²⁵⁸ See *supra* note **Error! Bookmark not defined.** and accompanying text.

²⁵⁹ See *supra* note 11.

²⁶⁰ See *supra* Part II.B.1. I am assuming that the alien life forms we encounter, if any, will *not* be members of *Homo sapiens sapiens*.

humans' claim to humanity and legal personhood will depend on the extent to which their transformative qualities are the product of incorporating mechanical and/or biological materials into their physical and/or genetic makeup.²⁶¹ In other words, I suspect it will depend on how far the Trans-humans have gone on the path toward Post-humanism.²⁶² Post-humans, of course, have transformed themselves into something other than Standard human beings.²⁶³ Thus, I suspect Post-humans might find legal (human) personhood too paltry to accept, opting instead for something superior.

The suspicions noted above may be accurate or they may simply be the product of a mind that has yet to encounter transformative human enhancements; it may be that, by the time Trans-humans and/or Post-humans emerge, we will be inured to the fact that "persons" need not look, communicate, behave and/or think like traditional members of the species *Homo sapiens sapiens*. We may have moved beyond the color-matching test of personhood we examined earlier into a more catholic standard.²⁶⁴

As to qualitative issues, the above list proceeds from plants down to Post-humans, (presumably) increasing in intelligence as one moves down the list. Since the list's creator refers to aliens as "intelligent" life forms²⁶⁵ and places them further down the list than humans and evolved humans, he apparently assumes aliens will be more intelligent than Post-humans.²⁶⁶

Similarly, the list identifies Enhanced humans as the first advance, in terms of intelligence, beyond Standard humans. The relatively slight difference between the two is why my analysis focuses solely on how and why their coincident existence is likely to make the application of existing doctrines of criminal responsibility problematic in any of several respects, a topic we will take up in Part III.

I have chosen to restrict my focus to Enhanced-Standard victimization, a phenomenon I describe later in this Part, for two reasons. First, I believe this type of victimization is the most likely to occur because it is only reasonable to assume that those who can afford, or otherwise have access to, technological enhancements will find them irresistible.²⁶⁷ It is difficult to imagine that we

²⁶¹ See *infra* note 273 (explaining three categories of Trans-humans whose physical and/or genetic makeup have been altered: cyborgs, chimeras and cybrids).

²⁶² See *supra* notes 252–253 and accompanying text.

²⁶³ See *supra* note 253 and accompanying text.

²⁶⁴ See *supra* Part II.B.2.

²⁶⁵ See Savulescu, *supra* note **Error! Bookmark not defined.**, at 215.

²⁶⁶ See *supra* note **Error! Bookmark not defined.** and accompanying text.

²⁶⁷ See *supra* notes 9–14 and accompanying text. See also Allhoff, *supra* note 7, at 21. As to "otherwise" having access to enhancements, the U.S. military was, for a time, aggressively pursuing human enhancement techniques that were designed to improve the cognitive and physical performance of the members of its military. See, e.g., Joel Garreau,

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

will not take at least one step down the path of “improving” ourselves.

Given the irresistibility of technological enhancements, the emergence of Enhanced humans is very likely, and probably inevitable. While it is possible that Enhanced humans will be joined or superseded by Trans-humans or Post-humans, I suspect the evolutionary path may not be that linear. If and when Trans-humans or Post-humans appear, we may be dealing with intelligent robots or alien life-forms, either or both of whom can also claim to be legal persons. Therefore, I am taking what I consider to be a very conservative approach to the evolution of humanity and the issues it may raise for criminal law.

The other reason I am restricting my focus to Enhanced-Standard victimization is that I assume the victimization that arises in this context will be doctrinally (but not empirically) indistinguishable from the victimization that may eventually arise between (i) Standard humans (if they survive) and Trans-humans, (ii) Standard humans (if they survive) and Post-humans, (iii) Enhanced humans and Trans-humans, (iv) Enhanced humans and Post-humans and (v) Trans-humans and Post-humans. I base that assumption on the fact that criminal law is intended to discourage “people” (however they may be defined) from preying on each other in ways that tend to undermine social stability.²⁶⁸ As I have explained elsewhere, intelligence is a necessary (but not necessarily sufficient) condition for criminal behavior, i.e., in one person’s deliberately choosing to prey upon (or attempt to prey upon) another.²⁶⁹ Criminal behavior is absent among species the members of which are not individually intelligent, but it emerges in varying degrees in species whose individual members are intelligent.²⁷⁰ So far, we humans have the most evolved capacity for criminal behavior.²⁷¹

Since Enhanced humans, Trans-humans and Post-humans will be

Enhancing the Warriors, CNN (May 30, 2005), http://money.cnn.com/magazines/fortune/fortune_archive/2005/05/30/8261230/index.htm. The U.S. military has backed off that effort for several reasons, but knowledgeable observers believe it may resume, at least at some point. See, e.g., Michael Burham-Fink, *The Rise and Decline of Military Human Enhancement*, SCIENCE PROGRESS (Jan. 7, 2011), <http://scienceprogress.org/2011/01/the-rise-and-decline-of-military-human-enhancement/>.

²⁶⁸ For more on this, see, for example, Susan W. Brenner, *Toward a Criminal Law for Cyberspace: Distributed Security*, 10 B.U. J. SCI. & TECH. L. 1, 5–49 (2004).

²⁶⁹ See *id.* at 11–46.

²⁷⁰ See *id.* Criminal, or “deviant,” behavior is an individual’s “deliberate failure to follow rules that govern behavior in a social system.” *Id.* at 28. Ants are not intelligent entities and therefore cannot engage in criminal, or deviant, behavior. See *id.* at 21 (“an ant cannot steal food from the colony stores and flee, attack another ant from its own colony or take a day off from work.”). See also *id.* at 20–28.

²⁷¹ See *id.* at 31–36.

incrementally more intelligent than us, it is reasonable to assume that they, too, will manifest criminal behavior. This criminal behavior may assume forms we would not recognize (just as our nineteenth-century predecessors would not recognize computer crimes), but that is not important. As long as humans, Enhanced humans, Trans-humans and/or Post-humans are willing to violate the law to gain an unfair advantage or otherwise inflict “harms” that threaten social stability, the world will have crime and will need a criminal law that can keep crime within acceptable levels.²⁷²

My goal, then, is to analyze how we might adapt our existing approach to the imposition of criminal liability to situations in which the victim and perpetrator of the crime are “persons” with very different abilities. My theory is that if we can devise principles that take the “difference” between Standard and Enhanced perpetrators and victims into account in assessing and imposing criminal liability, we can then extrapolate those principles to the variations outlined above and any others that may emerge.²⁷³

III. CRIME, DIVERGENCE AND RESPONSIBILITY

*[H]uman enhancement poses the very real risk of fostering a dangerous divide between enhanced and unenhanced individuals.*²⁷⁴

In Part II(A), we saw how law has approached the issue of accepting women, slaves, infants, “normal” humans, “abnormal” humans, animals, objects and artificial entities as legal persons. In Part II(B), we examined how and why we are likely to see the emergence of new and potentially even more problematic candidates for personhood: enhanced human beings. I use “enhanced human beings” as a collective noun that encompasses the three categories of “improved” humans we examined in Part II(B): Enhanced

²⁷² See, e.g., Susan W. Brenner & Leo L. Clarke, *Distributed Security: Preventing Cybercrime*, 23 J. MARSHALL J. COMPUTER & INFO. L. 659, 662 (2005) (“Crime is a complex, enduring aspect of human social life; societies accept that they cannot eliminate it and so strive to control it”).

²⁷³ In addition to Standard humans, Enhanced humans, Trans-humans and/or Post-humans, these principles might also be extrapolatable to crimes that involved alien life forms, cyborgs, cybrids and/or chimeras (assuming, of course, that Post-humans are not cyborg, cybrids and/or chimeras). Cyborgs are “hybrid creature[s]” that are “part machine and part human.” Andrea M. Matwyshyn, *Corporate Cyborgs and Technology Risks*, 11 MINN. J.L. SCI. & TECH. 573, 573 (2010). Cybrids are “cytoplasmic hybrids,” which are created by “‘incubating’ human genetic material in cytoplasm from an animal” and chimeras are created by “adding one or more animal cells to a human embryo.” Loane Skene, *Recent Developments in Stem Cell Research: Social, Ethical, and Legal Issues for the Future*, 17 IND. J. GLOBAL LEGAL STUD. 211, 240 n.136 (2010).

²⁷⁴ AL-RODHAN, *supra* note 7, at 229.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

humans, Trans-humans, and Post-humans.

Part II(B) examined the forces that are likely to produce Enhanced humans in the near future.²⁷⁵ In Part III(A), we will take the analysis a step further by considering how and why the emergence of enhanced human beings could produce conflict, including criminal victimization, between Enhanced and unenhanced (that is, Standard) humans.²⁷⁶ In Part III(B), we will analyze how our doctrines of criminal responsibility could be modified to encompass the victimization of enhanced human beings by Standard humans and vice versa.

A. Potential for Conflict

*If we start transforming ourselves into something superior,
what rights will these enhanced creatures . . . possess when
compared to those left behind?*²⁷⁷

As the question above illustrates, there is concern that the rise of Enhanced humans will create friction—even conflict—between them and their less-able counterparts—Standard human beings.²⁷⁸ Much of this concern derives from what many assume will be differential opportunities for enhancement, i.e., the

²⁷⁵ For the purposes of analysis, I assume none of the enhancements already in use have produced Enhanced humans as the concept is defined above. See *supra* note 7.

²⁷⁶ As to why I restrict the analysis to conflict between Enhanced and Standard humans, see *supra* Part II.B.4. As to the likelihood such conflict will emerge, perhaps in the not too distant future, an incident occurred in Paris in the summer of 2012 that illustrates how conventional humans can react with hostility when they encounter a “different” human being. See, e.g., George Dvorsky, *What May Be the World’s First Cybernetic Hate Crime Unfolds in French McDonald’s*, 109 (July 17, 2012), <http://io9.com/5926587/what-may-be-the-worlds-first-cybernetic-hate-crime-unfolds-in-french-mcdonalds> (Paris McDonald’s employees allegedly attacked Steve Mann, who was wearing a “Digital Eye Glass,” and tried to remove it from his head, despite the fact it is permanently attached and cannot be removed without special tools). For more on Mann’s Digital Eye Glass, see, for example, Physical Assault by McDonald’s for Wearing Digital Eye Glass, STEVE MANN’S BLOG (July 18, 2012), <http://eyetap.blogspot.com/2012/07/physical-assault-by-mcdonalds-for.html>. Mann is often (inaccurately) described as a “human cyborg.” See, e.g., Avram Piltch, *Cyborg Steve Mann Details Alleged McDonald’s Assault*, MSNBC (July 20, 2012), <http://www.technology.msnbc.msn.com/technology/technology/cyborg-steve-mann-details-alleged-mcdonalds-assault-889595>.

²⁷⁷ Francis Fukuyama, *Transhumanism*, FOREIGN POLICY (Sept. 1, 2004), <http://www.foreignpolicy.com/articles/2004/09/01/transhumanism>.

²⁷⁸ For a rather extreme view of the potential conflicts, see, e.g., GEORGE J. ANNAS, AMERICAN BIOETHICS 51 (2005):

[Posthumans] will likely view the old ‘normal’ humans as inferiors, even savages, and fit for slavery or slaughter. The normal, on the other hand, may see the posthumans as a threat, and if they can, engage in a preemptive strike by killing the posthumans before they themselves are killed or enslaved by them.

wealthy will be more able to enhance themselves and their children than will those of modest means.²⁷⁹ Those who envision this problem believe the wealthy will keep improving themselves, generation after generation.²⁸⁰ Some believe this will produce increasing embedded societal inequality, which, in turn, will lead to clashes between enhanced and Standard human beings.²⁸¹

Scholars from various fields are analyzing the possibility for such clashes and their likely impact on the fabric of future society.²⁸² Some predict that the enhanced will see Standard humans as inferior and therefore open to exploitation.²⁸³ I suspect Standard humans will be at least equally likely to resent Enhanced humans and to act on that resentment, at least on occasion, by lashing out at them.²⁸⁴ If scenarios such as this eventuate, societies will have to decide if they should continue to recognize only one class of “persons” or should divide “persons” into categories (e.g., Enhanced and Standard) and

²⁷⁹ See, e.g., *supra* note 235. See also *Transhumanist FAQ*, HUMANITY+, http://humanityplus.org/philosophy/transhumanist-faq/#answer_31 (“Will New Technologies Only Benefit the Rich and Powerful?”). See also *Human Enhancement: Making People Better or Making Better People?*, IRISH COUNCIL FOR BIOETHICS, <http://www.bioethics.ie/uploads/docs/Humanenh.pdf> (“Will Human enhancement lead to a two-tiered society?”). For a fictional depiction of this scenario, see, for example, *GATTACA* (Columbia Pictures 1997).

²⁸⁰ See, e.g., SILVER, *supra* note 235, at 4–6.

²⁸¹ As to the potential for clashes between enhanced human beings and Standard human beings, see, for example, *id.* For a less dramatic view of how conflict might arise between the two, see Hubbard, *supra* note 156, at 438–39:

[I]t seems likely that, no matter how radically altered, posthumans will be able to satisfy the test of capacity for personhood. . . . Ordinary humans might be tempted to deny them that status . . . because of the possibility that unEnhanced humans would be unable to compete successfully. On the other hand, posthumans may view themselves as superior, and there may be legitimate grounds for them to view ordinary humans as developmentally disabled. Even if the ordinary humans shared autonomous personhood with posthumans, ordinary humans might be granted a lesser version of civil and political rights.

(notes omitted). See also Allen Buchanan, *Moral Status and Human Enhancement*, 37 PHIL. & PUB. AFF. 346, 347 (2009), available at <http://pgrim.org/pa2010reading/buchananmoralstatus.pdf>. For a fictive scenario involving this type of conflict, see WILSON, *supra* note 7. For a contrasting viewpoint, see *Transhumanist FAQ*, HUMANITY+, http://humanityplus.org/philosophy/transhumanist-faq/#answer_39 (“Will Posthumans or Superintelligent Machines Pose a Threat to Humans Who Aren’t Augmented?”).

²⁸² See, e.g., *supra* notes 235, 281 and accompanying text.

²⁸³ See, e.g., AL-RODHAN, *supra* note 7, at 229 (Enhanced human would “likely . . . view an . . . unenhanced human as inferior and therefore possibly fit for exploitation”). See also *supra* notes 278, 281.

²⁸⁴ See generally *supra* note 235. For a fictional account of such a scenario, see *supra* note 7.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

adopt correlate, category-specific laws that govern the conduct of each category and their encounters with members of the other category.²⁸⁵

Such laws might be predicated on a premise analogous to the premise on which our juvenile laws are based, i.e., they might be intended to “protect” less-abled Standard humans from superior Enhanced humans.²⁸⁶ Or, instead of trying to “protect” Standard humans from Enhanced humans (or vice versa), a society could elect to segregate them, insofar as possible, by adopting laws that created a caste system in which Standard humans were restricted to certain, less desirable employment opportunities, avenues of education and residential areas.²⁸⁷ The goal would be to minimize conflict by minimizing contact

²⁸⁵ For fictive examples of such law, see *supra* note 7. As we will see, the issues raised by the existence of Standard and Enhanced persons are, at least in certain respects, analogous to those John Chipman Gray and the common law addressed in considering the “personhood” of “normal” human beings and “abnormal” human beings. See *supra* Part II.A.2.

²⁸⁶ See *supra* note 285. So, instead of needing protection because of their immaturity, Standard humans would be deemed to need protection because they were intellectually and/or physically inferior to their Enhanced counterparts. See, e.g., Barry C. Feld, *The Transformation of the Juvenile Court*, 75 MINN. L. REV. 691, 723–24 (1991) (noting that juvenile courts provide children with “all the procedural guarantees . . . available to adult defendants and additional enhanced protections because of the children’s vulnerability and immaturity”). Juvenile courts are not the only area in which law seeks to protect children from their own behavior. See, e.g., Elizabeth Cauffman & Laurence Steinberg, *The Cognitive and Affective Influences on Adolescent Decision-Making*, 68 TEMP. L. REV. 1763, 1763 (1995) (noting that in “In contract law, because immature individuals are more easily taken advantage of, minors receive special protection”).

Another, even less flattering analogy might be how law approaches the mentally handicapped. See, e.g., Daniel Wikler, *Paternalism in the Age of Cognitive Enhancement: Do Civil Liberties Presuppose Roughly Equal Mental Ability?*, in HUMAN ENHANCEMENT 341, 346 (J. Savulescu & Nick Bostrom ed. 2009).

[I]f the relative difference between average people and the mildly or moderately retarded person justifies steps by the former to curtail the liberties of the latter—for his or her own good, of course—would the same consideration not justify similar action by a much smarter-than-average person vis-à-vis the average person?

²⁸⁷ See *supra* note 235. See, e.g., David A. Prentice, *Brave New World of Genetic Engineering*, 1 NAT’L CATH. BIOETHICS Q. 526 (2001), reprinted in 17 ISSUES L. & MED. 312, 313–14 (2002) (noting that genetic engineering would create a caste system composed of different classes, or even different species, of humans). See also R. George Wright, *Personhood 2.0: Enhanced and Unenhanced Persons and the Equal Protection of the Laws*, *supra* note 235 at 1055–56; Maxwell J. Mehlman, *The Law of Above Averages: Leveling the New Genetic Enhancement Playing Field*, 85 IOWA L. REV. 517, 551–53 (2000).

Aldous Huxley’s *Brave New World* illustrates such an approach. See Aldous Huxley, *BRAVE NEW WORLD* 26–28, 73–75 (2006) (humans assigned to two higher castes—Alphas and Betas—and three lower castes—Gammas, Deltas and Epsilons). Huxley’s book is

between the two.

Such a radical approach might well eventuate at some point in the distant future. My focus, as I have noted before, is on the near future, which means my concern is with how we could adapt our existing doctrines of criminal responsibility so they could fairly and equitably be applied to something new: the victimization of a “superior” class of legal persons by a presumptively “inferior” class of persons and vice versa. We take up that issue in the Part immediately below.

B. Criminal Responsibility and Differential Personhood

*[A] special federal grand jury was convened today to investigate the outbreaks of violence between implanted and nonimplanted citizens that continue to plague the nation.*²⁸⁸

In this Part, we will analyze how our existing, one-size-basically-fits-all approach to imposing criminal liability may need to be modified if and when we find ourselves dealing with two classes of persons: Standard humans and Enhanced humans.

To encompass the relevant doctrinal and empirical factors, the analysis needs to incorporate three dichotomies, the most obvious of which is the Standard-Enhanced dichotomy. The second is the perpetrator-victim dichotomy, i.e., Standard humans and Enhanced humans can each be the perpetrators of a crime or the victims. The third dichotomy goes to an issue I noted earlier that has been an implicit element of our analysis: human enhancement can take the form of increasing a person’s intelligence or his or her physical abilities. While our analysis to this point has tended to focus primarily on cognitive enhancements, there is no reason to assume they will not go hand in hand with physical augmentation as well.²⁸⁹

Logically, then, the analysis needs to examine four basic scenarios: (1) Standard perpetrator and Standard victim; (2) Standard perpetrator and Enhanced victim; (3) Enhanced perpetrator and Standard victim; and (4) Enhanced perpetrator and Enhanced victim. While the scenarios, on their face, only appear to encompass the first two dichotomies noted above, our analysis

about a world in which “social stability is based on a scientific caste system,” with humans “graded from highest intellectuals to lowest manual workers.” Jose Felipe Anderson, *Catch Me If You Can! Resolving the Ethical Tragedies in the Brave New World of Jury Selection*, 32 NEW ENG. L. REV. 343, 390 n.275 (1998) (quoting THE OXFORD COMPANION TO ENGLISH LITERATURE 127 (Margaret Drabble ed., 5th ed. 1985)).

²⁸⁸ Daniel H. Wilson, AMPED, *supra* note 7 at 173. As note 7 explains, Wilson’s book is a novel that explores conflict between humans who have received neural implants that improve their intelligence and other cognitive facilities and those who have not.

²⁸⁹ See *supra* notes 10–14 and accompanying text. See also *supra* note 7.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

of each will include an assessment of the Enhanced participant's superior intellectual or physical abilities.

1. Standard perpetrator and Standard victim

Since our laws were (and are) devised to assess and impose criminal liability on Standard humans, e.g., unenhanced members of the species *Homo sapiens sapiens*, it seems this scenario does not present any issues that can be appropriately dealt with by existing criminal law. That is likely to be true if the basic criminal law that has evolved over the last centuries remains the criminal law—the only criminal law—that applies to Standard-Standard victimization.

Logically, it seems that the only context in which this scenario could become problematic is if we adopted “new” principles of criminal responsibility governing the third scenario noted above, i.e., Enhanced human victimizes Standard human. If we simply apply traditional Standard-human perpetrator and Standard-human victim criminal law to that scenario, then this first scenario should not become problematic.

If, though, we develop new principles of criminal liability that impose heightened standards of responsibility on an Enhanced human who victimizes a Standard human, this first scenario could become problematic, in the same way and for the same reasons the application of statutory rape laws to consensual sex between minors can become problematic.²⁹⁰ While this variation of the first scenario may seem unlikely, it might very well not be, especially if we were to base the so-far hypothesized heightened standards of criminal responsibility governing the third scenario on an analogy between Enhanced-Standard human encounters and adult-juvenile sexual encounters.²⁹¹

Juvenile laws, including statutory rape laws, are intended to protect children, who are deemed less capable than adults because of their immaturity, from being victimized by adults.²⁹² Statutory rape laws have, though, been used to prosecute minors who have consensual sex with other minors, even though that result is inconsistent with the laws' purpose of protecting children from

²⁹⁰ See *infra* notes 291–292 and accompanying text.

²⁹¹ In other words, the Enhanced human perpetrator would be analogous to a Standard “adult” human and the Standard human victim would be analogous to a Standard “juvenile” human who is victimized by the adult. See *supra* note 286 and accompanying text.

²⁹² See *id.* See, e.g., Megan Annitto, *Consent, Coercion and Compassion: Emerging Legal Responses to the Commercial Sexual Exploitation of Minors*, 30 YALE L. & POL'Y REV. 1, 31 (2011). See also Megan Kosse, *Banishing Children: The Legal (In)Capacity of Unaccompanied Alien Children to Falsely Claim U.S. Citizenship*, 37 WM. MITCHELL L. REV. 1954, 1980–1983 (2011); *Bellotti v. Baird*, 443 U.S. 622, 633–34 (1979). See generally Part II.A.2.

predatory adults.²⁹³ If we assume, for the purposes of analysis, that future law imposes heightened criminal responsibility on an Enhanced human who victimizes a Standard human, that law *might*, if it were not crafted to encompass only this particular scenario, also be applied to a Standard human who victimizes another Standard human. Given our experience with statutory rape laws, the likelihood such a result would eventuate would probably depend on the purpose of the law and the conduct it encompasses.²⁹⁴

There is also a converse scenario, in which a law that imposes a heightened standard of criminal responsibility on a Standard human who victimizes an Enhanced human is also applied to cases involving two Standard humans.²⁹⁵ Unlike the scenario analyzed above, this scenario involves a heightened standard of responsibility that is specifically, and intentionally, imposed on Standard humans, albeit in a different context.

The extrapolation of such a law to cases involving two Standard humans would presumably depend on the extent to which the rationale for imposing such responsibility on Standard humans who inflict certain “harm” on Enhanced humans could be extended to the victimization of one Standard human by another.²⁹⁶ Since the Part below examines the rationale for imposing such responsibility, I will defer the analysis of this issue until the next Part.

²⁹³ See Mary Graw Leary, *Self-Produced Child Pornography: The Appropriate Societal Response to Juvenile Self-Sexual Exploitation*, 15 VA. J. SOC. POL’Y & L. 1, 32 (2007). See also *State ex rel. Z.C.*, 128 P.3d 561, 563 (Utah Ct. App. 2005), *rev’d*, 165 P.3d 1206 (Utah 2007); *In re T.A.J.*, 62 Cal. App. 4th 1350, 1364–65, 73 Cal. Rptr. 2d 331, 340–41 (Cal. Ct. App. 1998); *State v. Barlow*, 630 A.2d 1299, 1299–1300 (Vt. 1993). The justification given for extending statutory rape laws to consensual sex between minors is the need to protect children “from themselves.” *Id.* at 1300.

²⁹⁴ As noted above, the justification given for extending statutory rape laws to encompass consensual sex between minors is the need to protect minors “from themselves.” See *supra* note 293. This justification is derived from the purpose of these laws (protecting minors) and the conduct at issue (sexual activity). It extrapolates the proposition that the law must protect minors because their immaturity makes them less able to “make good choices” than adults to encompass sexual activity in which the presumptive element of adult coercion is absent. See, e.g., *State v. Limon*, 122 P.3d 22, 35–36 (Kan. 2005). See also *supra* note 293. So the likelihood that the law postulated above would be applied to a Standard human who victimizes another Standard human (as well as to an Enhanced human who victimizes a Standard human), would probably be a function of the extent to which courts and legislatures found it necessary to “protect” Standard humans from the activity at issue, given their presumptively impaired ability to “make good choices.”

²⁹⁵ See *infra* Part III.B.2.

²⁹⁶ See *supra* notes 293–294 and accompanying text.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

2. Standard perpetrator and Enhanced victim

As we saw above, criminal law imposes heightened standards of criminal responsibility on victimizers who are presumed to be “superior” to their victims in one or more respects.²⁹⁷ The rationale for imposing such standards is to “protect” those who, due to immaturity or other factors, are less able to protect themselves than others.²⁹⁸

If we assume that all Enhanced humans will be physically and intellectually “superior” to all Standard humans, then there would seem to be no reason to impose a heightened standard of criminal responsibility on a Standard human who victimized an Enhanced human. Since this scenario involves the victimization of a “superior” human by an “inferior” one, it seems there should be no reason to use law to protect the “superior” person from the “inferior” person.²⁹⁹

The assumption noted above implicitly presumes that the Enhanced are a generic group, i.e., that they, like *Homo sapiens sapiens*, all possess intellectual and physical abilities that fall within a specific range. This is true of the members of *Homo sapiens sapiens* because we belong to a single species.³⁰⁰ The Enhanced, as the term is defined in this article, are not a new species.³⁰¹ They are members of our species who have utilized/are utilizing technologies of various types to enhance their intellectual and/or physical abilities (and, no doubt, appearance) in ways that exceed the genetic capacity of *Homo sapiens sapiens*.³⁰² And that, of course, means there *could* be a good deal of variation in the extent to which specific Enhanced humans have “improved” their physical appearance, physical abilities or intellectual abilities.

So far, we have assumed the Enhanced would be a unitary class, i.e., that the types and levels of enhancement would be consistent across all of those who qualify as Enhanced. That seems a reasonable assumption, at least as long as we assume that enhancement is a unitary process, i.e., one is, or is not, enhanced. But the assumption that enhancement is a unitary process is predicated on yet another assumption, namely, that enhancement is a zero-sum opportunity that is either available or is not available. As to availability, unless and until governments or other beneficent entities provide enhancement for

²⁹⁷ See *supra* Part III.B.1. We will also address this issue in *infra* Part III.B.3

²⁹⁸ See *supra* Part III.B.1. See also *infra* Part III.B.3.

²⁹⁹ See *supra* Part III.B.1.

³⁰⁰ See *supra* note 4. See also JOHN H. CARTWRIGHT, *EVOLUTIONARY EXPLANATIONS OF HUMAN BEHAVIOR* 173 (2001) (“A species is a set of organisms that possess similar inherited characteristics and . . . have the potential to interbreed.”).

³⁰¹ See *supra* note 7.

³⁰² See *id.*

free, it will almost certainly be available only to those with the ability to purchase or otherwise take advantage of the available universe of enhancement technologies.³⁰³

That opens up three possibilities for enhancement: Individuals enhance their physical and intellectual facilities to the maximum extent possible given existing technology (the Enhanced); individuals enhance their physical abilities (only) to the maximum possible; and individuals enhance their intellectual abilities (only) to the maximum possible. It is also, of course, possible that those who could not afford maximum enhancement would enhance their physical or intellectual abilities incrementally, as they were able to afford further improvements. For the purposes of analysis, though, I will focus only on the first three categories: the Enhanced, the physically Semi-Enhanced and the intellectually Semi-Enhanced. I am not including those who are incrementally pursuing intellectual or physical enhancement because I do not believe their status raises any legal issues other than those that emerge with the physically or intellectually Semi-Enhanced.³⁰⁴

This brings us to the issue of imposing heightened criminal responsibility on a Standard human who victimizes (i) an Enhanced human, (ii) a physically Semi-Enhanced human or (iii) an intellectually Semi-Enhanced human. As we saw above, the rationale (so far) for imposing heightened responsibility is to deter “superior” persons from taking advantage of “inferior” persons.³⁰⁵ Logically, then, there should, be no reason to impose such responsibility on a Standard human who victimizes an Enhanced or either type of Semi-Enhanced human because all three are presumably “superior” to the Standard human, at least in certain respects.

Since the Semi-Enhanced differ the least from our postulated Standard human perpetrator, it seems the argument for imposing heightened criminal responsibility on a Standard human who victimizes a Semi-Enhanced human should be stronger than the argument for imposing such responsibility on a Standard human who victimizes an Enhanced human. This, of course, assumes that the argument is based on the premise that we impose heightened criminal responsibility on “superior” humans who victimize “inferior” humans.³⁰⁶ While Semi-Enhanced humans should be at least somewhat “superior” to

³⁰³ For a discussion of “otherwise” acquiring enhancement, see *supra* note 267 and accompanying text.

³⁰⁴ Those who are pursuing enhancement incrementally are Semi-Enhanced humans, either because they are pursuing the enhancement only of their intellectual or physical abilities or because they are at an intermediate, and therefore incomplete, stage in their progress toward becoming an Enhanced human. They, therefore, should not present any legal issues that do not arise with the Semi-Enhanced, of whichever type.

³⁰⁵ See *supra* Part III.B.1.

³⁰⁶ See *supra* note 299 and accompanying text.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

Standard humans, they will certainly be less “superior” than will Enhanced humans. Their nascent level of enhancement means that they are not as “superior” as are Enhanced humans, which *might* justify the imposition of heightened criminal responsibility in this context. We will, therefore, analyze the permissibility of imposing such liability when a Semi-Enhanced human is the victim of the crime and then take up the issue of imposing such liability when an Enhanced human is the victim.

We begin with an intellectually Semi-Enhanced human. The future law we are postulating might elect to impose heightened criminal responsibility on Standard humans who use their physical prowess to victimize those whose intellect has been enhanced but whose physical abilities had not. The argument against imposing such responsibility would, of course, be that physical encounters between such individuals are, in effect, encounters between two Standard human beings and should therefore be governed by the standards that govern Standard-on-Standard victimization.³⁰⁷

The only argument I can see for imposing heightened responsibility on the Standard victimizer in this scenario is that the intellectually Semi-Enhanced are, as a group, entitled to protection from their less . . . “civilized” brethren. The premise might be that while intellectually Semi-Enhanced humans are physically indistinguishable from Standard humans, their augmented intellect means they are constitutionally ill-equipped to respond to physical aggression from Standard humans. In other words, while they are intellectually superior to Standard humans, their unenhanced physical abilities, coupled with their impaired capacity for aggressive behavior, requires that the law “protect” them by imposing heightened punishment on Standards who attack them.³⁰⁸

This rationale is in effect the converse of the one that has been used to impose heightened responsibility on “superior” humans who victimize “inferior” humans.³⁰⁹ That rationale implicitly assumes that “superior” and “inferior” are zero-sum concepts, i.e., one is either superior or inferior. The rationale here is more nuanced: the premise is that an intellectually Semi-Enhanced human’s augmented intelligence makes him or her “superior” to

³⁰⁷ For the scenario in which a Standard human uses his/her physical prowess to victimize a physically Semi-Enhanced human, see *infra* note 310.

³⁰⁸ This rationale might also justify imposing heightened criminal responsibility on a Standard human who physically victimizes an Enhanced human . . . if the latter’s augmented intelligence was deemed to interfere with his/her ability to respond effectively to physical aggression. The premise here might be that while Enhanced humans, unlike intellectually Semi-Enhanced humans, are physically as well as intellectually enhanced, the latter effectively trumps their ability to respond to physical aggression. The viability of that premise would, of course, depend on the aptitudes of the Enhanced in general or of specific Enhanced humans.

³⁰⁹ See *supra* Part III.B.1.

Standard humans as a general matter, but also makes him or her “inferior” to essentially more brutish Standard humans when it comes to physical conflict. The law might, then, impose heightened responsibility on physically enhanced Standard humans in an effort to deter them from victimizing the intellectually Semi-Enhanced.³¹⁰

Is there a correlate argument for imposing heightened criminal responsibility on Standard humans who victimize physically Semi-Enhanced humans by means other than the use of physical force? Assume that a Standard human defrauds a physically Semi-Enhanced human. Also assume that the fraud in no way involves the perpetrator’s and victim’s respective physical abilities. So the crime involves a Standard human and a Semi-Enhanced human whose intellect had not been augmented. It seems this scenario also, in effect, encompasses Standard-on-Standard victimization and should therefore be governed by the law that applies to such a scenario, i.e., the default criminal law.³¹¹

³¹⁰ Absent countervailing considerations, the same should be true if a Standard human uses his/her physical prowess to victimize a physically Semi-Enhanced human. (The Standard human might use weapons or other tactics to reduce or nullify the advantage the Semi-Enhanced would presumably otherwise enjoy given his/her enhancements.)

Like the scenario above, this one also reverses the rationale for imposing heightened criminal responsibility on “superior” individuals who victimize those who are “inferior” in some important respect. See *supra* Part III.B.1. Here, the victim is presumably “superior” to his/her victimizer with regard to the circumstances of the victimization, which means that, absent some other rationale for imposing heightened criminal responsibility, it would not be appropriate in this instance.

The scenario varies in a significant way if, as noted above, the Standard human used weapons or other devices to overcome or reduce the efficacy of the Semi-Enhanced human’s augmented physical abilities. That *could* be addressed, I suppose, by imposing heightened criminal responsibility on someone who does this to an Enhanced human. I emphasize that qualifier because it seems that the Standard human’s conduct could quite adequately be prosecuted as aggravated assault under existing, Standard-human-on-Standard-human criminal law. See, e.g., MODEL PENAL CODE § 211.1(2) (2011). That option would seem satisfactory unless, of course, the fact that the attack targeted an Enhanced human was, in and of itself, enough to justify the imposition of heightened responsibility on the Standard human perpetrator. See *infra* note 314 and accompanying text.

³¹¹ The same should also be true if a Standard human defrauds an intellectually Semi-Enhanced human. Here, the victim is presumably “superior” to his/her victimizer with regard to the specific abilities that are involved in fraud: the perpetrator’s ability to successfully deceive the victim and the discerning victim’s ability to see through this. See, e.g., *State v. Carcare*, 818 A.2d 53, 67 (Conn. 2003), *abrogated on other grounds by State v. Jenkins*, 3 A.3d 806 (Conn. 2010). See also *United States v. Fiorito*, 640 F.3d 338, 351 (8th Cir. 2011) (participant in fraud crime testified that she and the lead perpetrators “were looking for vulnerable, poor, dumb people” who “wouldn’t be able to catch on to our

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

Since the Semi-Enhanced's augmented *physical* abilities would presumably not be relevant to a Standard fraudster's victimization of a Semi-Enhanced, it is difficult to articulate an argument for imposing heightened criminal responsibility on the Standard victimizer in this scenario, unless we decide that this scenario, the one involving the intellectually Semi-Enhanced victim and other variations on these two scenarios are encompassed by a global rationale for imposing heightened responsibility on Standard humans who victimize the Enhanced or Semi-Enhanced.³¹² As we have seen, in United States law, the traditional rationale for imposing heightened criminal responsibility is to deter "superior" persons from taking advantage of "inferior" ones.³¹³ Criminal law has so far sought to protect those who are less able to protect themselves, but that does not exhaust the range of potential rationales for imposing heightened responsibility.

The Enhanced might decide that they—and perhaps their Semi-Enhanced counterparts—deserve more protection from the presumptively more erratic and less law-abiding (and also, perhaps, resentful) Standard humans than traditional criminal law accords. They might decide to use heightened criminal responsibility to protect the (more or less) "superior" from the "inferior" . . . a tactic that could become part of the Enhanced-Standard caste system hypothesized earlier.³¹⁴

scheme"); David Godfrey, *Financial Fraud Likely to Increase in 2009*, 30 BIFOCAL, April 2009, at 59, 59 (2009) ("Knowledge and a healthy dose of skepticism are the best tools to prevent becoming a victim of a financial scam").

Given that, and absent some other rationale for imposing such liability, heightened criminal responsibility should not be necessary in this scenario. *See supra* note 310. *See also supra* Part III.B.1. The same principle should apply, again absent countervailing considerations, if a Standard human defrauds an Enhanced human. *See generally supra* note 308.

³¹² This observation also encompasses the scenarios examined in the notes above. *See supra* notes 307–311.

³¹³ *See supra* Part III.B.1.

³¹⁴ *See supra* note 287 and accompanying text. Such a development would be neither illogical nor unprecedented: the traditional Indian caste system was based on the premise that the Brahmins were the "ontologically complete and most perfect representatives of the human species; all others are inferior approximations of the Brahmin standard." BRIAN K. SMITH, *CLASSIFYING THE UNIVERSE: THE ANCIENT INDIAN VARNA SYSTEM AND THE ORIGINS OF CASTE* 32 (1994). *See also* Sumeet Jain, *Tightening India's "Golden Straitjacket": How Pulling the Straps of India's Job Reservation Scheme Reflects Prudent Economic Policy*, 8 WASH. U. GLOB. STUD. L. REV. 567, 568–69 n.7 (2009). And as one source notes, traditional "Hindu criminal law provided for differing punishments for the same crime depending on the respective castes of the perpetrator and the victim." Donald E. Smith, *Religion and the Good Polity*, 4 CARDOZO J. INT'L & COMP. L. 277, 281 (1996). *See also* RAM PRASAD DAS GUPTA, *CRIME AND PUNISHMENT IN ANCIENT INDIA* 40 (2007) (when someone of a higher

Before we move on to the next scenario, I need to note an issue that might play a pivotal role in an effort to impose heightened criminal responsibility on Standard humans who victimize Semi-Enhanced or Enhanced humans (and vice versa): the perpetrator's knowledge that the victim was (or was not) enhanced. It seems that here, as in other similar contexts, such knowledge would be an essential element of the heightened responsibility.³¹⁵

The question lawmakers would have to resolve is whether such knowledge should be presumed (strict liability) or would have to be proven beyond a reasonable doubt based on the facts at issue in the case (personal fault).³¹⁶ While personal fault (*mens rea*) has historically been a defining characteristic of criminal law, American criminal law has accepted strict liability in certain contexts.³¹⁷ One author attributes this to "expediency: in some areas of conduct it is difficult to obtain convictions if the prosecution must prove fault, so enforcement requires strict liability."³¹⁸

Imposing heightened criminal responsibility on Standard humans who victimize Enhanced or Semi-Enhanced humans would therefore have to be based on one of these approaches to culpability: (i) the perpetrator is liable because the perpetrator *knew* of the victim's enhanced status and attacked for that reason (personal fault); or (ii) the perpetrator is liable because the perpetrator contumaciously *ignored* the possibility that the victim was enhanced (strict liability). And that brings up an issue we cannot resolve at this point, given our limited experience with enhancement: Would a Standard human be able to recognize a Semi-Enhanced or Enhanced human on sight, and vice versa? In other words, would it be apparent to a Standard human that

caste injures someone of a lower caste, "the punishment is less severe" than when someone of the lower caste "causes injury to a superior"). But see GERTRUDE EMERSON, VOICELESS INDIA 212–13 (1930) (guilt was in accordance with caste, rising as one's caste rose).

³¹⁵ The U.S. Sentencing Guidelines enhances the sentence of someone who targeted a "vulnerable victim if the defendant knew or "should have known" that the victim was "vulnerable," within the meaning of the Guidelines. See U.S. SENTENCING GUIDELINES MANUAL § 3A1.1(b)(1) (2012). See also *infra* Part III.B.3.a.i.

³¹⁶ See *infra* notes 317–318 and accompanying text. See also *Clark v. Arizona*, 548 U.S. 735, 766 (2006) ("As applied to *mens rea* (and every other element), the force of the presumption of innocence is measured by the force of the showing needed to overcome it, which is proof beyond a reasonable doubt that a defendant's state of mind was in fact what the charge states.").

³¹⁷ See, e.g., WAYNE R. LAFAYE, SUBSTANTIVE CRIMINAL LAW §§ 5.1 & 5.5 (2d ed. 2011). See also *United States v. Bailey*, 444 U.S. 394, 404 n.4 (1980) (strict liability crimes are "exceptions to the general rule that criminal liability requires an 'evil-meaning mind.'"); *State v. Lucero*, 531 P.2d 1215, 1217 (N.M. Ct. App. 1975) ("A strict liability statute is one which imposes criminal sanction for an unlawful act without requiring a showing of criminal intent.").

³¹⁸ LAFAYE, *supra* note 317, at § 5.5(c).

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

he was dealing with an Enhanced or a Semi-Enhanced human upon encountering that person? And would it be equally apparent to an Enhanced or a Semi-Enhanced human that she was dealing with a Standard human upon encountering that person?

Since I am assuming a world in which the three mix relatively freely, I am also assuming that none of the classes would wear distinct clothing or badges or other markers that formally identified their status.³¹⁹ But formal markers might not be needed; Standard humans might be able to identify Semi-Enhanced and Enhanced humans, and they might be able to identify Standard humans based on characteristics such as the person's speech, where they live, how they dress and, perhaps, even their physique.³²⁰

If a Standard human would not be able to identify a Semi-enhanced or Enhanced human, law would have to base the imposition of the heightened criminal responsibility on Standard humans who victimize Enhanced or Semi-Enhanced humans on the second approach noted above, i.e., on the premise that the Standard perpetrator was liable because the Standard perpetrator ignored the possibility that the victim was enhanced (strict liability).³²¹ If the opposite were true—if Standard humans could identify Semi-enhanced and Enhanced humans—law could base the imposition of such responsibility on personal fault, as noted in the first approach above.³²²

But these might not be the only considerations that determined the approach law used to culpability in this scenario. If the imposition of heightened criminal responsibility were based on the rationale noted above, i.e., the need to protect “superior” Enhanced humans from the “inferior” and therefore presumptively more dangerous Standard humans, law-makers might well opt to rely on strict liability. The reason they might do this lies in the fact that strict liability puts the risk of incurring criminal liability on those who engage

³¹⁹ Cf. ERIC D. WEITZ, *A CENTURY OF GENOCIDE: UTOPIAS OF RACE AND NATION* (2003) (in 1938, the Nazi regime ordered Jews to wear a yellow Star of David with the word “Jude” inscribed in the middle); Huxley, *supra* note 287 at 27–28 (members of the various castes in the society Huxley describes wear distinctive clothing, e.g., Alphas wear grey, Betas wear black, Gammas wear green and so on).

³²⁰ See generally Erin York Cornwell & Valeria P. Hans, *Representation Through Participation: A Multilevel Analysis of Jury Deliberations*, 45 *LAW & SOC'Y REV.* 667, 690 (2011) (“jurors can ‘read’ social class from others’ dress, speech, and . . . references to experiences.”); Wilbur C. Rich, *Putting Black Kids into a Trick Bag: Anatomizing the Inner-City Public School Reform*, 8 *MICH. J. RACE & L.* 159, 187 (2002) (“Different social classes have different linguistic or language codes.”).

³²¹ The use of strict liability in this context would be consistent with the rationale noted above, i.e., it would be used out of expediency. See *supra* note 318 and accompanying text. For more on this issue, see *infra* Part III.B.3.

³²² See *supra* note 318 and accompanying text. For more on this issue, see *infra* Part III.B.3.

in certain proscribed conduct.³²³ Since criminal liability is imposed without a demonstration of personal fault, strict liability is considered to be more effective in deterring the conduct at issue than the traditional, fault-based approach.³²⁴ So, if the goal was to protect the “superior” Enhanced humans from their more dangerous, and more primitive, counterparts, criminal law might well opt to impose strict liability on Standard humans who victimize Semi-Enhanced and/or Enhanced humans.

3. Enhanced perpetrator and Standard victim

To us, this scenario may seem the one in which the imposition of heightened criminal responsibility is the most appropriate, given that we are Standard human beings. As such, we cannot, perhaps, avoid some apprehension as to the inequities that might emerge in interactions between Enhanced humans and Standard ones.

As noted earlier, the author of a novel that deals with the emergence of a type of Enhanced human beings and their interactions with Standard humans includes a fictive federal court ruling that addresses one aspect of the relationship between the two.³²⁵ The federal judge holds that “in an effort to remedy the . . . disparity between natural and enhanced levels of intelligence” and “to create a level playing field,” the Enhanced “lack the capacity to contract” with Standard humans.³²⁶ In other words, the Enhanced are simply “too smart” to be allowed to enter into contractual relations with their less-abled Standard brethren.

That approach would, as we have seen, be consistent with criminal law’s historic concern with preventing “superior” persons from taking advantage of “inferior” ones.³²⁷ What is different here, of course, is that normal humans are now the “inferior” persons who must be protected from the “superior” Enhanced and Semi-Enhanced humans. In the novel, as noted above, the ruling is issued by an un-enhanced human being and is clearly intended as a protectionist measure, to ensure the Enhanced cannot exploit their superior intelligence to the detriment of the still-dominant Standard humans.³²⁸

While the fictional ruling is based in civil contract law, it is reasonable to

³²³ See, e.g., Erin H. Flynn, *Dismantling the Felony-Murder Rule: Juvenile Deterrence and Retribution Post-Roper v. Simmons*, 156 U. PA. L. REV. 1049, 1062–64 (2008).

³²⁴ See *id.* See also James H. Knight, *The First Hit’s Free . . . or Is It? Criminal Liability for Drug-Induced Death in New Jersey*, 34 SETON HALL L. REV. 1327, 1334–35 (2004).

³²⁵ See WILSON, *supra* note 7, at 32.

³²⁶ See *id.* In the novel, there are only two classes of people: what we are referring to as Enhanced humans and Standard humans. See *supra* note 7.

³²⁷ See *supra* Part III.B.1.

³²⁸ See WILSON, *supra* note 7, at 32. See also *supra* note 7.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

assume that the concern with protecting “inferior” Standard humans from “superior” Enhanced humans would manifest itself in criminal law, as well.³²⁹ We will therefore assume, for the purposes of analysis, that future criminal law will incorporate the policy of protecting “inferior” Standard humans from “superior” Semi-enhanced and Enhanced humans.³³⁰ The issue then becomes, how should it go about doing this?

As we saw in Part III(B)(2), criminal law takes two approaches to imposing liability: one relies on personal fault, in which the defendant is held liable for the “harm” he or she willfully inflicted on another person; the other approach is strict liability, in which the defendant is held liable for the “harm” he or she inflicted on someone who falls within a protected class of people.³³¹ One is individual-specific; the other is generic.

In the Parts below, we explore the potential for using these approaches in scenarios in which a Semi-Enhanced or Enhanced human victimizes a Standard human. We begin with strict liability.

(a) *Strict Liability*

As we also saw in Part III(B)(2), criminal law’s ability to rely on personal fault in holding a Standard human liable for victimizing a Semi-Enhanced or an Enhanced human will depend on whether Standard humans can identify either or both types of enhanced human. If a Standard human can identify enhanced humans, then it would be possible to predicate heightened criminal responsibility on personal fault, which, in turn, would be consistent with how

³²⁹ See *supra* Parts II.A.1–2. & III.B.1.

³³⁰ Such a policy would probably, as in Wilson’s novel, originate with Standard humans who were becoming discomfited by the presence, and abilities, of Enhanced humans. See WILSON, *supra* note 7. Their discomfiture might be analogous to, but more extreme than, the discomfiture some U.S. citizens feel about legal and/or illegal immigrants. See, e.g., Phil Roe, *Illegal Immigration Is a Serious Threat to America’s National Security*, THE HILL, April 26, 2012, <http://thehill.com/blogs/congress-blog/judicial/224051-illegal-immigration-is-a-serious-threat-to-americas-national-security>. See also *Immigration Invasion Threatens America’s Survival*, STORM FRONT, http://www.stormfront.org/truth_at_last/archives/immigrat.htm.

It could result in the imposition of the criminal liability postulated above and might eventually lead to a caste system that segregated Standard and Enhanced humans. See *supra* note 287 and accompanying text. See generally Daniel H. Wilson, *Amped*, *supra* note 7. If the caste system were implemented by Standard humans, who are likely to be the dominant force for some period after the Enhanced appear, it would no doubt be designed to “protect” them from the Enhanced. On the other hand, once they establish themselves, Enhanced humans might decide it was prudent—for their safety or simply to avoid encountering their lesser brethren—to create a caste system in which they were the dominant entities. See *supra* note 287 and accompanying text.

³³¹ See *supra* Part III.B.2.

criminal law has traditionally approached victimization.³³²

Such liability would be imposed upon, and only upon, Standard humans who knowingly victimized Semi-Enhanced or Enhanced humans. This is a product of the rationale postulated above that law would impose heightened criminal responsibility on “inferior” Standard humans to protect the “superior” Semi-Enhanced and Enhanced humans.³³³ As we also saw above, the imposition of this type of liability would be a function of the extent to which Standard humans could identify Semi-Enhanced and Enhanced humans.³³⁴ Logically, law cannot hold someone liable for knowingly victimizing victims who have certain characteristics, unless prosecutors can prove that the perpetrator knew the victim possessed those characteristics.³³⁵

Strict liability therefore becomes the residual predicate. If a Standard human would not be able to identify a Semi-enhanced or Enhanced human, law could base the imposition of the heightened criminal responsibility hypothesized above on strict liability, i.e., on the premise that the Standard perpetrator was liable because the perpetrator ignored the possibility that the victim was enhanced.³³⁶ As we saw above, the imposition of such liability might also be predicated on a policy of protecting “superior” Enhanced humans from their more primitive, and presumably more dangerous, counterparts.³³⁷

Scenarios in which a Semi-Enhanced or an Enhanced human victimizes a Standard human would be governed by the opposite analysis. As we have seen, American law uses heightened criminal responsibility to protect individuals who are “inferior” in certain respects (e.g., age, mental disability) from those whose abilities are normal and consequently “superior” to the victim’s.³³⁸ The analysis in Part III(B)(2) explored the converse, namely, the permissibility of using heightened criminal responsibility to protect the “superior” from the “inferior.”

The scenario with which we are currently concerned—a Semi-Enhanced or an Enhanced human victimizes a Standard human—falls within the original rationale noted above, i.e., using heightened criminal responsibility to protect

³³² See *supra* Part III.B.2.

³³³ See *supra* note 314 and accompanying text.

³³⁴ See *supra* note 322 and accompanying text.

³³⁵ See *id.*

³³⁶ See *supra* Part III.B.2. See also H.L.A. HART, PUNISHMENT AND RESPONSIBILITY: ESSAYS IN THE PHILOSOPHY OF LAW 20 (Oxford Univ. Press 1968) (a strict liability crime is one “where it is no defence to show that the accused, in spite of the exercise of proper care, was ignorant of the facts that made his act illegal.”).

³³⁷ See *supra* Part III.B.2.

³³⁸ See *supra* Part III.B.1.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

the “inferior” from those who are “superior” in certain respects.³³⁹ It falls within this rationale because the Semi-Enhanced and the Enhanced are, in varying degrees, physically and mentally “superior” to Standard humans.³⁴⁰ The relationship between them is therefore analogous to the relationships that gave rise to the policy of protecting the “inferior” from the “superior”; one can analogize the Semi-Enhanced and Enhanced to “normal” adult human beings and Standard humans to children or other “abnormal” human beings.³⁴¹

In Part III(B)(1), we saw that American criminal law seeks to protect minors from adults who will coerce them into having sexual relations by adopting laws that make such activity a distinct offense—statutory rape.³⁴² American statutory rape laws derive from English law: in 1275, the Statute of Westminster made it a felony to “have carnal Knowledge of Woman Child under ten Years of Age.”³⁴³ This and other early statutory rape laws were concerned with protecting a father’s interest in his daughter’s chastity, since “a non-virgin was considered less marriageable” and less likely to bring her father a dowry.³⁴⁴

The United States “adopted England’s [gender-specific] statutory rape laws when it adopted the English common law” and “initially did not change the age of consent.”³⁴⁵ At the end of the nineteenth century, women’s groups began lobbying to increase the age of consent to better protect “girls from male sexual aggression.”³⁴⁶ They succeeded, but statutory rape laws remained gender-specific until the mid-twentieth century, when a movement began to revise them so they protected minor males, as well as females.³⁴⁷ So, modern U.S. statutory rape laws are based on the need to protect “inferior” minors from making bad choices due to their immaturity.³⁴⁸

We could employ a similar approach in using criminal liability to protect

³³⁹ See *supra* Part III.B.1.

³⁴⁰ See *supra* Part I.

³⁴¹ See *supra* Part II.A.2.

³⁴² See *supra* Part III.B.1.

³⁴³ The Statute of Westminster I, 1275, 3 Edw. 1, c. 13 (Eng.).

³⁴⁴ See, e.g., Michelle Olberman, *Regulating Consensual Sex with Minors: Defining a Role for Statutory Rape*, 48 BUFF. L. REV. 703, 754–55 (2000).

³⁴⁵ Meredith Cohen, *No Child Left Behind Bars: The Need to Combat Cruel and Unusual Punishment of Statutory Rape Laws*, 16 J.L. & POL’Y 717, 726 (2008).

³⁴⁶ Daryl J. Olszewski, *Statutory Rape in Wisconsin: History, Rationale, and The Need For Reform*, 89 MARQ. L. REV. 693, 695 (2006).

³⁴⁷ See, e.g., Kelly C. Connerton, *The Resurgence of the Marital Rape Exemption: The Victimization of Teens by Their Statutory Rapists*, 61 ALB. L. REV. 237, 254–55 (1997); Michelle Oberman, *Turning Girls into Women: Re-Evaluating Modern Statutory Rape Law*, 85 J. CRIM. L. & CRIMINOLOGY 15, 30–33 (1994).

³⁴⁸ See *supra* Part III.B.1. See, e.g., *State v. Granier*, 765 So.2d 998, 1001 (La. 2000).

“inferior” Standard humans from “superior” Semi-Enhanced and Enhanced humans. It would require adopting statutes that, like statutory rape laws, make it a crime for an enhanced human to engage in conduct that was designed to victimize a Standard human.³⁴⁹ But unlike statutory rape laws, which are concerned with a very specific type of victimization, these laws would presumably impose heightened criminal liability on enhanced humans who victimize Standard humans in any of the ways our criminal codes prohibit (along with, perhaps, certain “new” crimes, if such were deemed necessary).³⁵⁰ If the goal is to level the playing field between Standard and enhanced,³⁵¹ the categorical imposition of heightened liability on Semi-Enhanced or Enhanced humans who victimize Standard humans in any way would seem necessary.

That differentiates the Enhanced-Standard laws we are postulating from statutory rape laws in at least one notable respect: Statutory rape criminalizes conduct that would otherwise be legal. It is not a crime to have sexual relations; statutory rape makes it a crime to have sexual relations if the victim falls into the protected class of minors.³⁵²

Like statutory rape laws, Standard-victimization laws would be designed to protect those who belong to an “inferior” class of humans from those whose “superior” abilities put the former at a disadvantage in their mutual encounters. Unlike statutory rape laws, however, these laws would presumably apply to essentially any “criminal” encounter between a Standard human and a Semi-Enhanced or an Enhanced human.³⁵³ Legislatures could implement this

³⁴⁹ These statutes might, like statutory rape laws, make the Standard human’s consent to the victimization irrelevant to the imposition of criminal liability, on the premise that the laws were intended to “protect” the “inferior” human from his/her bad choices. *See, e.g.*, *Chase v. State*, 285 Ga. 693, 700, 681 S.E.2d 116, 121 (Ga. 2009); *Bjerke v. Johnson*, 777 N.W.2d 183, 193 (Minn. Ct. App. 2007); *State ex rel. Campbell v. Conley*, 2006 WL 1440317, at *3 (Tenn. App. 2006).

In other words, given the disparity in abilities between the Semi-Enhanced or Enhanced human perpetrator and the Standard human victim, the latter would conclusively be presumed incapable of consenting to the acts involved in the crime. *See, e.g.*, *State v. Sprouse*, 719 S.E.2d 234, 242 (N.C. App. 2011); *People v. Armstrong*, 490 Mich. 281, 292 n.14, 806 N.W.2d 676, 682 n.14 (Mich. 2011).

³⁵⁰ Law-makers might except certain offenses from the imposition of such liability on the grounds that they do not directly implicate the differential abilities of Standard humans versus Semi-Enhanced and Enhanced humans. *See infra* note 353. The imposition of heightened criminal liability would otherwise be used to create an additional disincentive for victimizing Standard humans.

³⁵¹ *See supra* note 326 and accompanying text.

³⁵² *See, e.g.*, Kay L. Levine, *The External Evolution of Criminal Law*, 45 AM. CRIM. L. REV. 1039, 1093 (2008).

³⁵³ Ironically, consensual sexual relations might be an exception, at least as long as the Standard human and the Semi-Enhanced or Enhanced human were both adults.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

approach by amending the relevant statutes to make it an aggravated, strict-liability crime to commit the offense when a Standard human was the victim and the perpetrator was enhanced.

(b) *Personal Fault*

As we saw in Part III(B)(2), individual-specific heightened criminal liability is a viable option in the Standard-Enhanced victimization scenario if Standard humans can identify Semi-Enhanced or Enhanced humans. Since such liability is intended to “protect” Enhanced humans, it must be predicated on the Standard human’s electing to victimize the Semi-Enhanced or Enhanced human because he or she is enhanced.³⁵⁴

If we were to impose individual-specific heightened criminal liability on a Semi-Enhanced or an Enhanced human who victimized a Standard human, such liability would have to be predicated on the enhanced human’s either (i) selecting the victim because the victim is not enhanced (in order to take advantage of that circumstance)³⁵⁵ or (ii) victimizing someone the enhanced human knows is a Standard human (but did not target for that reason).³⁵⁶

For the purposes of this analysis, therefore, we will assume that Enhanced humans will be able to identify Standard humans. This means Semi-Enhanced and Enhanced humans are aware, when they are dealing with Standard humans, that the latter are not enhanced.

We reviewed these issues in the previous Part but we did not analyze the permissibility of imposing individual-specific heightened criminal responsibility on a Standard human who victimizes a Semi-Enhanced or an Enhanced human. We did not analyze this issue because I, at least, am not aware of any doctrines in the criminal law that might be applied to that scenario.

I am, though, aware of two principles that might be applied to scenarios in which an Enhanced human victimizes someone he or she knows to be a Standard human.³⁵⁷ One focuses on the victim, the other on the perpetrator.

³⁵⁴ See *supra* Part III.B.2. Cf. *supra* Part III.B.3.a (strict liability).

³⁵⁵ See *infra* Part III.B.3.b.i. This in effect incorporates the Model Penal Code’s concept of purposeful action. See MODEL PENAL CODE § 2.02(2)(a).

³⁵⁶ See *infra* Part III.B.3.b.ii. This in effect incorporates the Model Penal Code’s concept of knowing action. See MODEL PENAL CODE § 2.02(2)(b). See *infra* note 357.

³⁵⁷ I am using a knowledge standard, rather than a purposive, reckless or even negligent standard, in this analysis because I believe it is consistent with notions of personal fault and with the purpose of imposing heightened criminal responsibility on an Enhanced human who victimizes a Standard human.

It seems reasonable to impose such liability on the Enhanced human as long as he/she was “aware of” the relevant attendant circumstance (e.g., the victim is a Standard human) and it was his/her “conscious object” to engage in the conduct responsible for the

We will examine both below.

(i) Vulnerable Victim

The first principle goes not to the imposition of liability but to the penalty imposed on the perpetrator. The federal sentencing guidelines include a sentence enhancer that applies when the defendant “knew or should have known” the victim of the offense “was a vulnerable victim.”³⁵⁸ The application note for the guideline defines a vulnerable victim as someone “who is unusually vulnerable due to age, physical or mental condition.”³⁵⁹

The vulnerable victim enhancement is based on a “‘just deserts’” rationale, i.e., that an individual who victimizes someone who is less able to defend himself or herself deserves “extra punishment.”³⁶⁰ The enhancement is analogous to statutory rape in that it is intended to protect those who, for one reason or another, are less able to protect themselves; the enhancement is also analogous to statutory rape in that it tends to be described in terms of certain classes of people, but differs in that the imposition of liability is based on “the individual victim and not the class of persons to which the victim belonged.”³⁶¹ The three factors cited above—age, physical condition or mental condition—create “a strong presumption of unusual vulnerability,” but the sentencing court must find that (i) the relevant factor(s) actually contributed to the victim’s vulnerability, and (ii) the defendant was aware of the factor(s).³⁶²

victimization and/or to cause such victimization. See, e.g., MODEL PENAL CODE § 2.01(2)(a). See also *id.* at § 1.13(9)–(10).

And since the knowledge element would also encompass those who acted purposely, this approach provides adequate protection for Standard humans without unduly penalizing Enhanced humans.

³⁵⁸ U.S. SENTENCING GUIDELINES MANUAL § 3A1.1(b)(1) (2012), available at http://www.ussc.gov/Guidelines/2012_Guidelines/Manual_HTML/Chapter_3.htm. We, of course, are using a “knowingly” standard in this analysis. See *supra* note 357.

³⁵⁹ *Id.* at Application Note 2.

³⁶⁰ See, e.g., Jay Dyckman, *Brightening the Line: Properly Identifying a Vulnerable Victim for Purposes of Section 3A1.1 of the Federal Sentencing Guidelines*, 98 COLUM. L. REV. 1960, 1974–75 (1998).

³⁶¹ *United States v. Smith*, 133 F.3d 737, 749 (10th Cir. 1997). See, e.g., *United States v. Anderson*, 349 F.3d 568, 572 (8th Cir. 2003) (applying this enhancement “requires a fact-based explanation of why advanced age or some other characteristic made one or more victims ‘unusually vulnerable’ to the offense conduct, and why the defendant knew or should have known of this unusual vulnerability.”).

³⁶² Dyckman, *supra* note 360, at 1974. See, e.g., *United States v. Morris*, 350 F.3d 32, 37–38 (2d Cir. 2003); *United States v. Gerard*, 129 F.3d 119, 1997 WL 659821, at *8 (7th Cir. 1997). This is consistent with the knowledge standard used in this analysis. See *supra* note 357 and accompanying text.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

Future law could use an analogous approach in dealing with a Semi-Enhanced or Enhanced human who victimized a Standard human. Assume, for example, that a physically Semi-Enhanced human defrauds someone he or she knows is a Standard human.³⁶³ Since the perpetrator's enhancement is (presumably) not relevant to the victim's vulnerability, it should not play a role in the liability analysis, even if the Semi-Enhanced perpetrator knew the victim was a Standard human being.³⁶⁴ As we saw above, this is essentially Standard-on-Standard crime and should be treated as such.³⁶⁵

The result differs if the physically Semi-Enhanced human physically abuses one he or she knows is a Standard human. Here, the victim's relative physical condition puts the victim at a disadvantage and makes the victim vulnerable.³⁶⁶ Heightened criminal liability should be imposed on the Semi-Enhanced human because he purposely or knowingly exploited his advantage in committing the crime.³⁶⁷ And the same respective results should apply, for the same reasons, if an intellectually Semi-Enhanced human (i) physically victimizes a Standard human or (ii) defrauds a Standard human.

What about cases in which an Enhanced human victimizes a Standard human? The Enhanced perpetrator (i) is physically and intellectually superior to the victim and (ii) purposely targeted the victim because the victim is not enhanced or because the perpetrator knew the victim is not enhanced and (iii) is therefore especially vulnerable to a physical attack or to being defrauded.³⁶⁸ Heightened criminal responsibility should be imposed on the Enhanced perpetrator regardless of whether the perpetrator physically or intellectually victimized the Standard human, because the perpetrator exploited his or her advantage in committing the crime.³⁶⁹

³⁶³ The vulnerable victim enhancement, as currently configured, encompasses fraud and other intellectually-based victimization. *See, e.g.*, *United States v. Etoty*, 679 F.3d 292, 295 (4th Cir. 2012); *United States v. Thompson*, 463 F. App'x. 887, 2012 WL 1071210, at * 3–*4 (11th Cir. 2012); *United States v. Manamela*, 463 F. App'x. 127, 2012 WL 401612, at *5 (3d Cir. 2012).

³⁶⁴ This approach is analogous to the vulnerable victim analysis noted above. *See supra* note 362 and accompanying text.

³⁶⁵ *See supra* note 311 and accompanying text. The result would, of course, be different if the perpetrator's physical enhancement was somehow relevant to the perpetration of the fraud.

³⁶⁶ *See supra* note 359 and accompanying text.

³⁶⁷ *See supra* note 362 and accompanying text. *See also supra* notes 355–356 and accompanying text.

³⁶⁸ *See supra* Part III.B.3.b. The same should be true, albeit to a lesser extent, if a Semi-Enhanced human victimized a Standard human. *See id.*

³⁶⁹ *See supra* note 362 and accompanying text. *See also supra* notes 355–356 and accompanying text. If law-makers wanted to limit the applicability of this liability, they

Future lawmakers could continue to approach the imposition of such liability as a part of the sentencing process, or they could selectively incorporate it into substantive criminal statutes.³⁷⁰ As to the latter, they might decide that it was only necessary to use such liability to protect Standard humans from particularly egregious crimes.³⁷¹

(ii) Martial Arts

The vulnerable victim principle is well-established in U.S. sentencing law, but the converse principle, which focuses on the perpetrator, is not. I am referring to it as the “martial arts” principle because some have suggested that martial arts experts should be held to a higher standard in fights and other physical encounters because their skills give them an unfair advantage over “regular” people.³⁷²

While I have been unable to find any cases in which a court specifically held that a trained martial artist is essentially an “enhanced” fighter, the issue has been raised and has met with some acceptance.³⁷³ And one author recently advanced a proposal for incorporating a test called the “martial sufficiency test” into the law of self-defense to calibrate the extent to which a trained martial artist used his or her skills in self-defense (as opposed to

could do so by requiring that the enhanced perpetrator have purposely exploited his/her advantage in committing the crime. *See supra* note 357.

³⁷⁰ *See, e.g.*, ARIZ. REV. STAT. § 13-1205(C) (LexisNexis 2012); 18 PA. CONS. STAT. § 2902(b) (2012); VA. CODE ANN. § 18.2-152.3:1(C) (West 2010).

³⁷¹ *See id.*

³⁷² *See, e.g.*, Stephen Michael Ian Kunen, *Superhuman in the Octagon, Imperfect in the Courtroom: Assessing the Culpability of Martial Artists Who Kill During Street Fights*, 60 EMORY L.J. 1389, 1390 (2010–2011). For the special skills of trained martial artists, *see id.* at 1410–19.

³⁷³ *See, e.g.*, *Dominguez v. Thaler*, No. EP–07–CA–222–FM, 2009 WL 4059163, at *6 (W.D. Tex. Nov. 20, 2009):

[W]e cannot say that it was irrational to conclude that Dominguez’s hands and knees qualified as deadly weapons. The evidence reveals [he] . . . had trained in the martial arts for over twenty years and that he had participated in a number of tournaments. Yvette testified that he used this martial arts training during the estimated thirty-minute assault The injuries . . . were severe enough for Dr. Saunders to worry about serious injuries, including subdural hematoma, cerebral contusions, and fractures to the vertebrae.

Dominguez was convicted of “aggravated assault with a deadly weapon, namely hands and knees.” *Dominguez v. State*, No. 08-02-00211-CR, 2004 WL 1658350, at *1 (Tex. App. July 26, 2004).

Here, I am using the term “enhanced” in a purely generic sense, i.e., the acquisition of special abilities through training rather than through technology. *See supra* note 7.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

overreacting).³⁷⁴

Some courts have also applied an analogous concept to hold that while the hands and feet of non-martial artists are not normally deadly weapons, they can become deadly weapons when an attacker uses them against someone who is at a distinct physical disadvantage.³⁷⁵ The premise here is that while someone's hands or feet are not generally considered to be a deadly weapon, the situation is "quite different" when they are used "upon an infant . . . or upon a person enfeebled by old age, sickness, or other apparent physical disability."³⁷⁶

My point is that criminal law at least to some extent recognizes the need for a type of heightened liability when someone who is stronger or otherwise more physically advantaged than another person exploits that advantage to victimize the latter. This is analogous to the vulnerable victim principle we examined above in that it focuses on the victim's vulnerability to what might otherwise be a relatively minor assault.³⁷⁷

It differs from the vulnerable victim principle, however, in that the focus here is more on the perpetrator's advantage than the victim's vulnerability. As opposed to the "just deserts" rationale noted above, the "martial arts" principle is based on the premise that the defendants' enhanced abilities make him more dangerous in the same way the use of a deadly weapon in committing a crime makes any offender more dangerous.³⁷⁸

This is the element that could be extrapolated to provide a basis for imposing heightened criminal responsibility on a Semi-Enhanced or Enhanced human who knowingly victimizes a Standard human. The concept I am

³⁷⁴ See Kunen, *supra* note 372, at 1420–29. The author begins by examining two versions of the facts in a California case: In the first, the defendant used excessive force because of his martial arts training rather than out of malice; in the second, he acts out of malice, intentionally killing the victim. See *id.* at 1391–92 (hypotheticals based on *People v. Torre*, No. E039015, 2007 Cal. App. Unpub. LEXIS 5104, at *2–*6 (Cal. Ct. App. June 25, 2007)).

³⁷⁵ See, e.g., *State v. McNeil*, No. COA11–708, 2012 WL 1337365, at *6 (N.C. Ct. App. Apr. 17, 2012) (mother's hands were the deadly weapon used to cause the death of her 19-month-old son); *State v. Estes*, No. COA11–408, 2011 WL 5544790, at *7 (N.C. Ct. App. Nov. 15, 2011) (woman's hands and feet were the deadly weapons used to cause the death of a "small and feeble man" who weighed 124 pounds and suffered from "coronary artery disease, pulmonary disease, and emphysema"). See also *State v. Sallie*, 186 S.E.2d 667, 674 (N.C. Ct. App. 1972); *Bishop v. People*, 439 P.2d 342, 346 (Colo. 1968).

³⁷⁶ *Sallie*, 186 S.E.2d at 674. While the victims are often children or ill or elderly adults, courts have also applied this principle when the unfair advantage results from a notable disparity in the size and strength of two normal adults. See, e.g., *State v. Jacobs*, 301 S.E.2d 429, 430 (N.C. Ct. App. 1983); *State v. Grumbles*, 411 S.E.2d 407, 409–10 (N.C. Ct. App. 1991).

³⁷⁷ See *supra* Part III.B.3.b.i.

³⁷⁸ See, e.g., *State v. Johnson*, 974 P.2d 855, 861–62 (Wash. Ct. App. 1999).

referring to as the “martial arts” principle focuses on a normal human being using an advantage he or she has acquired through training, physical size, age relative to the victim or physical condition to inflict disparate “harm” on another normal human being.³⁷⁹ For the principle to apply, the perpetrator must be aware of the advantage he/she possesses over the victim.³⁸⁰

Law could extrapolate that principle to the physical victimization of Standard humans by Semi-Enhanced and/or Enhanced humans on the premise that the latter’s physical abilities objectively exceed those of Standard humans.³⁸¹ The extrapolation would be consistent with the policy noted above, e.g., to protect “inferior” Standard humans from “superior” Enhanced humans, and with the rationale of the “martial arts” principle.³⁸²

Extrapolating the “marital arts” principle to fraud and other crimes in which the victimization is predicated on cognitive disparities would be more problematic. As noted above, the vulnerable victim enhancement encompasses cases in which the victim was defrauded or the victimization was otherwise nonphysical.³⁸³ It should therefore not be difficult to extrapolate that principle to cases in which Semi-Enhanced and Enhanced humans exploit their superior cognitive abilities to victimize Standard humans.

The “martial arts” principle, on the other hand, is exclusively concerned with cases in which a physically more-abled human exploits that advantage to physically injure, or even kill, a less physically abled human being. It should not be difficult to extrapolate that principle to cases in which Semi-Enhanced or Enhanced humans exploit their greater physical abilities to assault or even kill Standard humans. But it seems that this principle, at least, could not legitimately be expanded to encompass non-physical victimization. We might, of course, come up with a correlate principle that encompassed fraud and other types of cognitively-based victimization.

C. Sum

The theory upon which our political institutions rest is,

³⁷⁹ Unlike the enhanced perpetrator, these Standard human perpetrators exploit a physical advantage that is well within the normal range of human abilities.

³⁸⁰ See, e.g., *McNeil*, 2012 WL 1337365, at *5–*6 (defendant convicted of felony-murder predicated on felony child abuse, which required that the defendant intentionally inflict serious physical injury on the child) (citing N.C. GEN. STAT. § 14-318.4 (2009)).

³⁸¹ The process would simply require analogizing encounters between a Standard human and a Semi-Enhanced or an Enhanced human to physical encounters between a normal adult and an infant or someone “enfeebled by old age, sickness, or other apparent physical disability.” *State v. Sallie*, 186 S.E.2d 667, 674 (N.C. Ct. App. 1972). See *supra* note 376 and accompanying text.

³⁸² See *supra* notes 373–374 and accompanying text.

³⁸³ See *supra* note 363 and accompanying text.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

*that . . . all are equal before the law.*³⁸⁴

If humans split into differently-abled classes, we may have to revisit this “maxim”, at least insofar as criminal law is concerned.³⁸⁵ If some humans are smarter, stronger and/or otherwise “superior” to others who have not had the benefit of technological enhancement, treating everyone as equal before the law actually creates opportunities for inequality, at least with regard to the victimization of those who have, in effect, been left behind.³⁸⁶

It seems, then, that if and when we confront this state of affairs, criminal law will have to decide how it should recalibrate certain principles to address the converse of the scenario we examined earlier, i.e., protecting “normal” humans from their “abnormal” and therefore superior counterparts.

IV. CONCLUSION

*We . . . make tools to extend our reach. Every new tool
changes us.*³⁸⁷

After researching this article, I am convinced we will begin to see the emergence of Enhanced humans in the not too distant future. As noted above,³⁸⁸ I use “Enhanced humans” to refer to human beings whose physical and/or intellectual abilities have been improved by the elective use of one or more technologies.

Like others, I suspect the driving force in the emergence of Enhanced humans will, at least initially, be the military.³⁸⁹ As an expert in the ethics of emerging technologies noted, “[i]n the next generation, our warfighters may be able to eat grass, communicate telepathically, resist stress, climb walls like a lizard, and much more.”³⁹⁰ It is not difficult to imagine that at least some of

³⁸⁴ *Cummings v. Missouri*, 71 U.S. 277, 321–22 (1866). See also Universal Declaration of Human Rights art. 7, G.A. Res. 217 (III) A, U.N. Doc A/RES/217(III) (Dec. 10, 1948), <http://www.un.org/en/documents/udhr/>.

³⁸⁵ See, e.g., *Truax v. Corrigan*, 257 U.S. 312, 332 (1921) (noting that the above is one of several maxims that show “the spirit in which Legislatures, executives and courts are expected to make, execute and apply laws”).

³⁸⁶ We might, in effect, realize Orwell’s conception of a governance system in which “all . . . are equal but some . . . are more equal than others.” GEORGE ORWELL, *ANIMAL FARM* 112 (1946).

³⁸⁷ Wilson, *supra* note 7 at 274.

³⁸⁸ See *supra* note 7.

³⁸⁹ See, e.g., Efthimios Parasidis, *Human Enhancement and Experimental Research in the Military*, 44 CONN. L. REV. 1117, 1119, 1129–31 (2012).

³⁹⁰ Patrick Lin, *More Than Human? The Ethics of Biologically Enhancing Soldiers*, THE ATLANTIC (Feb. 16, 2012, 3:57 PM), <http://www.theatlantic.com/technology/archive/2012/02/more-than-human-the-ethics-of-biologically-enhancing-soldiers/253217/>. Dr. Lin cites the following projects as the basis for his prediction: Defense Advanced

these initiatives will produce enhancements that will find their way into civilian life.³⁹¹ It was, after all, DARPA's antecedent, ARPA, that gave us the Internet.³⁹²

I also suspect that our experience with the effects of human enhancement will not be as tidy as the future I implicitly assume in this article. I suspect that, while we will see analogues of the Semi-Enhanced and Enhanced humans I hypothesized earlier, we will also see the emergence of other, more exotic candidates for "legal person."

While it is notoriously difficult to predict the future, I suspect we will eventually find ourselves working with, competing with and perhaps even warring with intelligent robots,³⁹³ cyborgs³⁹⁴ and even chimeras.³⁹⁵ If and when that happens, criminal law is likely to find itself dealing with issues that are analogous to, but far more complex than, the ones addressed in this article.

It is, I think, relatively easy to conceptualize how criminal law should enforce basic fairness and morality between degrees of human beings. As we have seen, that process "merely" requires extrapolating existing principles into a somewhat more complex empirical context. It is therefore essentially a linear analysis, though one that is likely to cause us a fair degree of discomfort.

We have, at least in most countries, spent the last century or so establishing the proposition that all human beings are equal before the law.³⁹⁶ In so doing, we have come to assume that arraying humans along a continuum in which some are "superior" and others are "inferior" in any of several respects is

Research Projects Agency-Defense Sciences Office: Crystalline Cellulose Conversion to Glucose (C3G), http://www.darpa.mil/Our_Work/DSO/Programs/Crystalline_Cellulose_Conversion_to_Glucose_%28C3G%29.aspx; Mike D'Zmura, *Silent Spatialized Communication*, UNITED STATES ARMY RESEARCH LABORATORY, <http://www.arl.army.mil/www/pages/472/54228%20quadchart0209%20Elmar.pdf>; *Enabling Stress Resistance*, DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, http://www.darpa.mil/Our_Work/DSO/Programs/Enabling_Stress_Resistance.aspx; *Z-Man*, DEFENSE ADVANCED RESEARCH PROJECTS AGENCY, http://www.darpa.mil/Our_Work/DSO/Programs/Z_Man.aspx.

³⁹¹ See, e.g., JONATHAN D. MORENO, *MIND WARS: BRAIN RESEARCH AND NATIONAL DEFENSE* 11–13 (2006).

³⁹² See, e.g., Mitch Waldrop, *DARPA and the Internet Revolution*, in *DARPA: 50 YEARS OF BRIDGING THE GAP* 78, 80 (2008), available at <http://www.darpa.mil/about/history/history.aspx>.

³⁹³ See, e.g., Eddie Wrenn, *Intelligent Design*, DAILY MAIL (May 22, 2012), <http://www.dailymail.co.uk/sciencetech/article-2148000/Scientists-build-robot-design-tools.html> (Zurich scientists create a tool-building robot, which relies on instructions).

³⁹⁴ See, e.g., Anil Ananthaswamy, *Nerve Probe Controls Cyborg Moth in Flight*, THE NEW SCIENTIST (Feb. 8, 2012), <http://www.newscientist.com/article/dn21431-nerve-probe-controls-cyborg-moth-in-flight.html>. See *supra* note 273 (defining cyborgs).

³⁹⁵ See *supra* note 273 (defining chimeras).

³⁹⁶ See, e.g., *supra* note 384 and accompanying text.

2013] *TECHNOLOGICAL ENHANCEMENT & CRIMINAL RESPONSIBILITY*

anathema . . . a return to the misguided views of eugenics and its eventual influence on the Holocaust.³⁹⁷ If and when we see the rise of Enhanced humans, we very well may have to revisit that assumption, at least in certain regards.

As we also saw in Part II(A), law has so far not had to be especially concerned about how to enforce basic fairness and morality between a mix of human beings with varying abilities and also, perhaps, intelligent robots, cyborgs, chimeras, animals and alien beings.³⁹⁸ That will clearly have to change if and when humans with varying degrees of enhancements join the Standard human population. I suspect it will have to change even more if and when law decides to admit “objects” (e.g., robots), animals (enhanced or not), semi-humans (cyborgs and chimeras) or space aliens to the “legal person” club currently monopolized by Standard human beings.³⁹⁹

And that raises an interesting issue: on the one hand, the emergence of non-human candidates for “legal personhood” might produce a negative reaction, a *Homo sapiens* jingoism the effect of which would be to restrict the category of “legal person” to entities who could prove they were “human” enough to qualify. On the other hand, the emergence of such candidates for “legal personhood” might produce the opposite reaction: a de-emphasis on “humanness” as a qualifier for “legal person.”

In either event, it is likely that criminal law will, at some point, have to adapt its doctrines so they are capable of enforcing basic fairness and morality on an uneven playing field, i.e., in a world in which “legal person” has ceased

³⁹⁷ See, e.g., Sonia M. Suter, *A Brave New World of Designer Babies?*, 22 BERKELEY TECH. L.J. 897, 906–15 (2007). See also Mark A. Rothstein, *Legal Conceptions of Equality in the Genomic Age*, 25 LAW & INEQ. 429, 431 (2007) (“By the 1930s, Nazi Germany had started down the insidious path of positive and negative eugenics that would culminate in the Holocaust”); *Buck v. Bell*, 274 U.S. 200, 205–07 (1927) (upholding the sterilization of a “feeble-minded white woman” because “[t]hree generations of imbeciles are enough”). “Negative eugenics” seeks to “discourage the parenthood of the least desirable” members of a society. CALEB WILLIAMS SALEEBY, *PARENTHOOD AND RACE CULTURE: AN OUTLINE OF EUGENICS* 199 (1909). But see DAN DINER, *BEYOND THE CONCEIVABLE: STUDIES ON GERMANY, NAZISM, AND THE HOLOCAUST* 168–69 (2000).

³⁹⁸ To illustrate how this issue could arise, in a context involving an animal killing a human, see, e.g., Maev Kennedy, *SeaWorld to Decide Fate of Killer Whale after Trainer’s Death*, THE GUARDIAN (Feb. 25, 2010), <http://www.guardian.co.uk/world/2010/feb/25/seaworld-to-decide-killer-whale-fate>.

³⁹⁹ As we saw earlier, law currently employs certain legal fictions that allow it to treat inanimate objects as simulated “persons” for certain purposes. See *supra* Part II.A.5. And as we also saw, animals essentially have no claim to the status of “legal person.” See *supra* Part II.A.4. Cyborgs and chimeras do not exist, so law has yet to grapple with their potential for “legal personhood.” Logically, it seems that they should be treated as a type of enhanced human, which would bring them within the analysis in Part III.

B.U. J. SCI. & TECH. L.

[Vol. 19:

to be a unitary concept.

It should be an interesting century.